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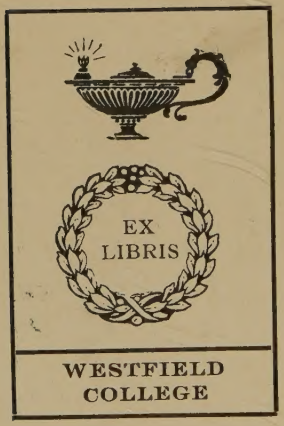

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VOL. I

THE ENGLISH PATENTS OF MONOPOLY

BY

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TO MY MOTHER

PREFACE

During the sixteenth and seventeenth centuries, England experienced a series of attempts to establish monopolies by royal letters-patent, both for external and internal undertakings. The external or commercial monopolies were conceded to groups of merchants who exported to foreign countries the staples and manufactures of England. These great commercial companies, notably the Merchant Adventurers and the East India Company, embodying conspicuously as they did so much of national ambition and energy, have naturally attracted the attention of investigators, while the internal monopolies, less prominent but no less interesting, have been hitherto comparatively neglected. The avowed motive of both the foreign and domestic monopolies was that of organizing trade and industry under a national regulation which should protect and stimulate these enterprises. The system of internal monopoly, however, included a greater variety of objects and a greater complication of motives than did the group of external monopolies. It included, for example, a control of the press and of postal communication, primarily for political purposes; it comprised also licenses for contraventions of penal statutes, inspired by fiscal motives as well as the necessity of relief from cramping regulation. More important, from an economic point of view, than either of these were the undertakings in which it was hoped that the establishment of monopoly, under royal sanction, might be the means of encouraging new or weak domestic industries. The value of a systematic investigation of the latter, and the justification of this monograph, lies not only in the light derived from one experiment with industrial privileges, but in the special significance of this phase of English economic history. With some allowance for overlapping, it may be said that in England "monopoly" formed the connecting link between "mercantilism" and "protection." The system of exclusive privilege supplemented, if it did not entirely supplant, the earlier policy which prohibited the export of specie and of raw materials and enacted statutes of

"employment;" and it led the way to the policy of protective customs duties.

The materials for this study were collected in the Harvard College and Law School Libraries at home, in the Bodleian Library at Oxford, and at London in the Public Record Office, the British Museum, the Privy Council Office, the Patent Office, the Guildhall, Lincoln's Inn Library and the Library of the Society of Antiquaries. Acknowledgments are due to the authorities and officials of these institutions for unfailing courtesy and timely assistance. I regret that the kind interest of many friends in England can be recorded here only in a general expression of grateful appreciation. But I owe especial thanks to Mr. E. W. Hulme for guidance in tracing the history of inventions from 1560 to 1660, and to Mrs. Lilian Tomn Knowles and Mr. George Unwin for helpful suggestions from their own studies in the economic history of this period. The two latter, differing somewhat as to the interpretation of the industrial policies of the sixteenth and seventeenth centuries, aided my effort to do impartial justice to the motives of the advocates of "ordered trade" as well as to those of the advocates of "freedom."

My study of this subject has been conducted under the guidance of Professor Edwin F. Gay of Harvard University, and I am indebted to him for sympathetic assistance from first to last. I do not dare to think what my results would have been without his stimulus and encouragement, without his hints as to sources of information, and without his suggestions as to the broader historical relations of my subject. A service that I could ill have spared was his conscientiously thorough criticism of my work, for which I cannot be too grateful.

CAMBRIDGE, MASS., August, 1906.

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ABBREVIATIONS

Lansd.	Lansdowne manuscripts.
Titus	Cotton manuscripts, Titus.
Vesp.	Cotton manuscripts, Vespasian.
Harl.	Harleian manuscripts.
Egerton	Egerton manuscripts.
Sloane	Sloane manuscripts.
B. M. Add.	British Museum Additional manuscripts.
C. R.	Council Registers.
C. J.	Journals of the House of Commons.
L. J.	Journals of the House of Lords.
Parl. Hist.	Parliamentary History.
S. P. D.	State Papers, Domestic.
S. P. D. E.	State Papers, Domestic, Elizabeth.
S. P. D. J. I.	State Papers, Domestic, James I.
S. P. D. Add.	State Papers, Domestic, Addenda.
S. P. D. C. I.	State Papers, Domestic, Charles I.
Docq.	Signet Office Docquet Books.
S. P. Docq.	State Paper Docquets.
Pat.	Patent Rolls.
Exch. Dep. by Com.	Depositions taken by Commission, King's Remembrancer of the Exchequer.
Rem.	Remembrancia.
Rep.	Repertories of the Aldermen, London.
Hist. MSS. Com.	Historical Manuscripts Commission Reports.
Salisb. Pap.	Calendar of Salisbury Papers, Hatfield House.
H. of L. MSS.	Calendar of manuscripts of the House of Lords.
B. M. Proc. Coll.	British Museum Collection of Proclamations.
Soc. Ant. Proc. Coll.	Society of Antiquaries Collection of Proclamations.
R. O. Proc. Coll.	Record Office Collection of Proclamations.
Dict. Nat. Biog.	Dictionary of National Biography.
L. Q. R.	Law Quarterly Review.

Secondary works and articles cited by the names of their authors.
See Bibliography, pages 245–250.

PART I

POLITICAL HISTORY

THE ENGLISH PATENTS OF MONOPOLY

PART I.—POLITICAL HISTORY

CHAPTER I

TO THE CASE OF MONOPOLIES

NUMEROUS isolated attempts to grant patents of monopoly as a form of industrial encouragement were made on the continent before any similar action was taken in England.[1] In 1467 a monopoly was granted for the manufacture and sale of paper in Berne and its jurisdictions.[2] Two years later Johann von Speyer received an exclusive privilege of practising the trade of printing in Venice for five years.[3] It is from Venice that our first instance of glass-patents, as well as of printing rights, comes. In 1507, the Council of Ten granted an exclusive privilege for twenty years for the introduction of a secret process of mirror-making.[4] It was also by patent that this industry was established in France in 1551, when a ten-year monopoly was granted for the manufacture of mirror-

[1] In the absence of any careful investigation of the subject, for countries other than England, use must be made of occasional and perhaps not always trustworthy allusions in various secondary works.

[2] Kohler, *Handbuch des deutschen Patentrechts*, Mannheim, 1900, p. 21, quoting Zeitschrift für schweizerisches Recht, N. F. xv, pp. 6 ff.

[3] Klostermann, *Das Patentgesetz für das deutsche Reich*, Berlin, 1877, pp. 15, 16, quoting Waechter, *Das Verlagsrecht*, Stuttgart, 1857, Th. i, p. 8: "Ut per annos quinque proxime futuros nemo omnino sit qui velit, possit, valeat, audeatve exercere dictam artem imprimendorum librorum in hac inclyta civitate Venetiarum et districtu suo nisi ipse Mag. Johannes."

[4] Nesbit, *Glass*, London, 1878, p. 90. Nesbit gives no authority for this statement, but his book shows familiarity with original Italian documents. It has been suggested that the German glass-house, mentioned in 1507 by these Muranese, may have been the forerunner of one specially exempted in 1599 from a Flemish grant for Venice glass. Houdoy, *Verreries à la façon de Venise : La fabrication flamande d'après des documents inédits.* Paris, 1873.

glass "according to the Venetian art." [1] A curious and interesting example of an early patent is given by Cardan. He describes a machine, recently invented, which is so useful to millers, monasteries, convents, and nobles that the inventor devotes himself entirely to supplying their demands for the machine, for which he has an exclusive privilege from the emperor.[2]

There were, however, few places in Europe where the economic conditions favored the extensive development of a patent system in the sixteenth century. Adequate guaranty of monopoly over a wide industrial area is an essential prerequisite of success for such a system, and hence Italy, Germany, and the Netherlands offered no congenial field. Isolated industrial centres within these countries, whether autonomous or not, could not protect an inventor against infringement beyond their own borders, so that the advantages of an extended market were not sufficiently attractive to encourage the divulging of a secret of manufacture. There were better opportunities in France and England. The industrial progress of France was superior to that of England, but the political, social, and economic integration of the country had not gone as far. The French crown enjoyed more wealth and magnificence, but less

[1] Renouard, *Traité des brevets d'invention*, Paris, 1844, pp. 79, 80: "Des lettres-patents du 13 Juin 1551 octroyent à Theseus Mutio, de Bologne, faculté, permission et privilège de seul, durant l'espace de dix ans, faire ou faire faire dans le royaume les verres, miroirs, canons et autres verreries à la façon de Venise, et iceux exposer ou faire exposer en vente dans le royaume, et ailleurs où bon lui semblera; à peine, contre les contrevenants de confiscation et d'amende arbitraire."

[2] Cardanus, *De Subtilitate*, Nuremberg, 1550, p. 61: "Nam nunc cum pistores omnes ob utilitatem habeant: ille vero privilegium confectus sit a Cæsare ne quis habere possit praeter ejus consensum, vitam ex hac agit industria, et adeo brevi tempore sibi domum aedificavit. Neque enim pistores soli, sed collegia sacerdotum, et virginum Deo sacrarum, et nobiles quicunque familiam magnam alunt, ob egregiam utilitatem ne dicam necessitatem habent, plures etiam alii quos non tam utilitas quam ipsa rei admiratio incitavit, facere curavere." Cardan then goes on to give an explanation of the machine and adds a drawing of it. On Cardan's place in the development of experimental physics, see Hallam, *Literature of Europe*, i, pp. 400–401, and the article in Larousse, *Dictionnaire universel du xixe siècle*. Cardan's allusion to this patent is noted by Fournier, *Le Vieux-Neuf*, 2d ed. 1877, i, p. 391, n. 1, where, referring to the early protection of inventors in Germany, he states: "La propriété industrielle avait, au xvi[e] siècle, été réglée en Allemagne, au moyen de privilèges qu'on donnait, non pas comme en France ainsi qu'on le verra plus loin, à de grands seigneurs, donc les inventeurs n'étaient plus que les associés ou plutôt les protégés, mais qui étaient délivrés aux inventeurs eux-mêmes."

real national power than did the Tudors. Not only did the economic organization in France foster local exclusiveness, but the efforts of the central power were calculated to strengthen rather than to supersede gild regulation in its expanded form of national monopoly. Then, too, the financial resources of the French monarchy tempted the state into a more active intervention in industry than was possible to the poorer English government, so that monopolies were less likely to be granted to private individuals. A generous use of public money proved hardly more advantageous in French industry than in French colonial enterprise.[1] Apparently the earliest systematic use of patents in France dates from the closing years of the sixteenth century, and this may well have been in imitation of the English patent system, already well developed.[2]

While continental governments were making sporadic attempts to establish new industries by means of industrial privilege, England was moving in the same direction through a more or less independent course of development. Before the middle of the sixteenth century the industrial patents granted in England were in effect but promises of protection to foreign workmen introducing new arts, especially those connected with the clothing trades. The best known of these were issued in the reign of Edward III.[3] In the following century other cases apparently indicate the continuance of the policy.[4] The practice of the early Tudor monarchs, in encouraging the introduction of new arts, was to attract skilled artisans into their own service. In this way German armorers, Italian shipwrights and glass-makers, and French iron-founders were induced to establish new industries in England with the hope of royal patronage.[5]

Down to this time the industrial privileges conferred by the

[1] Compare Fagniez, *Économie sociale de France*, chap. ii, with Parkman, *Old Régime in Canada*, ch. xx.

[2] Fagniez, pp. 119 and 154 ff.; Renouard, pp. 80 ff.; Levasseur, *Hist. class. ouvr.* 2d ed. 1901, vol. ii, pp. 172 ff.

[3] Cal. Pat. Rolls, May 1, 1327, Hist. MSS. Com. xiv, pt. viii, p. 7; Pat. 1331, 5 Edw. III, pt. 1, m. 25, reprinted in Rymer (patent to John Kempe); Pat. 1336, 10 Edw. III; Pat. 1368, 42 Edw. III, pt. 1.

[4] Pat. 1440, 18 Hen. VI, pt. 18, m. 27 (patent to John Schiedame and company); Rymer, xi, 317.

[5] Hulme, article in L. Q. R. April, 1896; Page, *Denizations*, p. xlii.

crown, far from being exclusive, had the contrary effect. They tended to break down special privileges. Instances of grants of monopoly must be sought, not in the royal patents, but in acts of Parliament confirming and protecting local advantages that were being threatened. The decentralization of industry under the domestic system had led to organized attempts to support the former local monopoly of the towns. The borough craftsmen sometimes induced the country artisans to join their organizations, but more commonly they excluded this outside competition.[1] Popular feeling, expressed not only in literature [2] but also in statutes,[3] supported the protection of town monopoly and regarded with disfavor the increasing migration to the countryside. In this policy the Tudor sovereigns, despite their occasional attempts to introduce skilled artisans, were in full agreement with Lords and Commons. The forces of economic progress, however, were working against the local inertia as expressed in parliamentary policy. Industry was outgrowing the jurisdiction of the crafts, and was becoming national. This called for a regulation that was national, or none at all.

The release of industry from the fetters of local custom opened the way for a diversification as well as an expansion of industry. Elizabeth's accession introduced a vigorous and on the whole a popular national administration. Elizabeth, with the help of her ministers, had the shrewdness to grasp the opportunity. Instead of attempting to bolster up a local supervision which the spread of the domestic system had rendered inadequate, the government was encouraged by the new economic and political conditions in the effort to establish a system of national regulation, and to stimulate new industries by increasing the extent and effectiveness of the former policy of protective intervention. Thus the policy of granting patents was obviously suggested by the course of development

[1] See Unwin, *Industrial Organization*, p. 86, citing stat. 20 Hen. VI, c. 10 (Norwich, 1442), Hist. MSS. Com. Bury St. Edmunds, p. 133, Shrewsbury, p. 11.

[2] Hales, *Discourse of the Commonweal*, Miss Lamond's ed. p. 131.

[3] 14 & 15 Hen. VIII, c. 1, country weavers not to deal with foreigners. 14 & 25 Hen. VIII, c. 3, protection of Norwich artisans against neighboring competition. 21 Hen. VIII, c. 12, protection of Bridport artisans against neighboring competition. 25 Hen. VIII, c. 18, protection of Worcester artisans against neighboring competition. 5 & 6 Edw. VI, c. 24, protection of Norwich artisans against neighboring competition. 1 Mary, c. 7, seven-year apprenticeship in the country only. 2 & 3 Ph. & M. c. 7, the weavers' act. 5 Eliz. c. 4, statute of apprentices.

in internal economic conditions. The period covered by the reigns of Elizabeth, James I, and Charles I was not the beginning of industrial monopoly. It was important chiefly because of its national and systematic character, whereas hitherto monopoly had been much more a local phenomenon. The system of monopolies under royal patronage was in fact a somewhat reactionary attempt to reconstitute monopolies along national lines. The development of the patent system in England was not accidental; many factors conspired to make this country the birthplace of the system. A nation of a fair degree of economic unity, with the narrower gild regulations and local exclusiveness already declining, with a sovereign who in practice was well-nigh absolute, who surrounded herself with ministers possessing at least the best practical economic ideas that the time afforded, and who was interested in the industrial development of the country but without command of resources sufficient to involve the state in public enterprise on its own account, — such were the chief conditions favorable to the development of a systematic patent policy in England earlier than in any other country.

While the system as settled policy was not borrowed, the initial suggestion apparently came from abroad. The earliest recorded application for an exclusive patent for introducing a new art into England bears the date of 1558 and was presented jointly by an Englishman and an Italian.[1] The petition was granted in 1562 as a reward of "diligent travail" and to "give encouragement to others."[2] Meanwhile two other patents had been granted for inventions of foreign origin.[3] Before any one of these was conceded, another Italian, Giacopo Acontio, in a petition for a patent prefaced his application with the suggestion that "nothing is more honest than that those who by searching have found out things useful to the public should have some fruit of their rights and labors, as meanwhile they abandon all other modes of gain, are at much expense in experiments, and often sustain much loss." He then explained that he had invented certain furnaces and "wheel-

[1] S. P. D. E. 1558, i, 56.

[2] Pat. 4 Eliz. pt. 10 (May 26, 1562), to George Cobham, for a dredging-machine.

[3] Pat. 3 Eliz. pt. 6 (August 8, 1561), for white soap. Pat. 4 Eliz. pt. 13, (January 3, 1562), for saltpeter.

machines" which others would copy without remunerating him unless he were protected.[1]

During the first ten years of the patent policy (1561–70), twelve patents were granted for various chemical products and processes, and six for mechanical inventions. Some of the inventions and inventors were native and some foreign, for "invention" was held to cover first importation as well as first contrivance. The chemical patents included such products as soap, saltpeter, alum, sulphur, oil, salt, glass, and cloth- and leather-dressing. The mechanical patents covered dredging, draining, and grinding machines, furnaces and ovens. During this decade also, numerous mining privileges were conferred upon two groups of prospectors.[2] In the course of the next decade, seven mechanical inventions were patented, chiefly for water-raising and drainage, and three for chemical inventions, earthenware, glass, and sulphur. There was also a patent for sail-cloth and one for playing-cards. Originally, the patents had been given for ten years, but by this time twenty, twenty-one, and thirty years had become more ordinary terms, the practice of reissuing had commenced, and patents were no longer wholly confined to new arts. In the course of the third decade (1581–90), more obvious abuses crept in. No less than three new patents were issued for the manufacture of salt. The third, to Thomas Wilkes,[3] continued in force by means of extensions until 1601, when it was abolished by proclamation in response to the bitter outcry against the extortions of the patentee. Patents for salt, starch, train-oil, and paper were issued to men who did not claim to be the first introducers. In this decade, also, the saltpeter licenses became particularly irritating and proved a constant source of popular resentment, for the deputies used their authority to dig in houses, cellars, and barns.[4] Several

[1] S. P. D. Add. December, 1559, ix, 39. The editor of the calendar adds that "Acontius had an annuity of £50 granted February 27, 1560, letters of naturalization, October 8, 1561, and a license to take up workmen to amend Plumstead Marshes, June 24, 1563, but not the patent here solicited." This is a mistake, as the patent was received September 7, 1565. See also Hulme, L. Q. R. April, 1896, p. 148.

[2] See the list of patents given by Mr. E. W. Hulme in L. Q. R. April, 1896.

[3] Pat. September 1, 1585.

[4] The grievance from the saltpeter-men antedated the accession of Elizabeth. See Clode, *Early History of the Merchant Taylors' Company*, i, p. 87 (1545–6.)

mechanical inventions received patents, which caused little trouble. The ten years from 1591 witnessed the renewal of patents for starch, salt, train-oil, paper, glass, and playing-cards, and a new patent for vinegar, in addition to a few unimportant privileges for genuine inventions.[1] In each of the cases named established industries were attacked. Meanwhile, the system of licenses was being given an unprecedented extension. Those which attracted most attention were for the sealing of leather, the alnage of the new draperies, the survey of cordage, digging for saltpeter, the supervision of taverns and of gaming-houses; patents for remission of penalties under the acts for sowing of flax and hemp, for the tanning of leather, and against the use of gig-mills; and finally a miscellaneous group of licenses for the exportation of commodities contrary to statute.[2]

The export licenses occupy a position somewhat anomalous. They were admitted to be monopolies and were decried as such, — fairly so, perhaps, for they constituted exclusive privileges, — but their purpose and results were in opposition to trade restrictions. They were granted for the most part in contravention or suspension of statutes prohibiting certain exports. Hence they may very well have constituted a political grievance. It is needless to say that in current opinion they also formed a grave economic grievance. The prohibitory acts of Parliament were frankly class-legislation, and very serious results would have followed the rigid enforcement of some of the most extreme of them. This was the case particularly with a great deal of legislation, experimental in character, which was passed at one session at the demand of one interest, only to be modified or repealed at the next or a later session, at the complaint of another interest. Sweeping restrictions were made in certain trades, the rigid enforcement of which either experience or urgent representations demonstrated would be injurious. In such cases the crown simply exercised the wide discretionary power which it claimed, and authorized certain exceptions to the law which would give partial or complete relief. The special licenses for the export of grain, for instance, were in addition to the licenses automatically

[1] See list of patents, 1570–1600, by Mr. Hulme in L. Q. R. January, 1900.

[2] See Appendices B, C, and J.

provided according to prices in the locality of export.[1] Like the licenses for the export of ordnance, they were often justified by the desire to help needy allies upon the continent. In the case of ordnance, however, popular alarm was frequently aroused by the supposed laxity of the crown in yielding to such suits without due guaranties that English guns would not thus find their way to England's enemies.[2] While the prohibitions of the export of grain were in the interest of consumers, those upon the export of calf-skins, pelts, wool, and "white" broadcloths were for the protection of the native manufacturers. But such restrictions, rigidly enforced, would have caused serious difficulties, for the native industries were not in a position fully to utilize the advantages thus conferred. They were not able to work up all the raw material placed at their disposal, and even if they had materially increased their output they would have been unable to find a market for their products, owing to the fact that, without protection, they had already enjoyed a market for as much of their output as their crude workmanship could satisfactorily supply.[3] The prohibitions upon export of raw materials were intended to force upon foreigners and English alike products which were completely manufactured in England. But as most of these prohibitions proved to be premature, there was the prospect of discouraging and even ruining a large part of the interests devoted to the production of raw materials. This would in the long run have reacted upon English craftsmen, reducing them to as small a supply and as high a price for their materials as before the prohibitions. To afford relief, licenses were granted either by way of exception or as privileges of long or indefinite duration. The prohibitions upon the export of calf-skins, for example, would have ruined a very important industry and a well-established branch of foreign trade. To avoid these consequences, numerous licenses

[1] E. g., Cotton, Vesp. C. xiv, no. 238 (fol. 574); Pat. 3 Eliz. pt. 1 (January 24, 1561), and see warrant for licenses, July, 1592, in Appendix B, and also, in the same Appendix, the item under date of November, 1592; and Appendix H.

[2] The acts against export of "gun-metal," 33 Hen. VIII & 2 Edw. VI, were supplemented by proclamation to cover ordnance of iron, but licenses and illicit export excited the House of Commons, and a bill was there passed against the transportation of iron-ordnance. D'Ewes, pp. 670 ff. (December, 1601), Oldys, *Life of Raleigh*, 1829, pp. 345 ff.

[3] See below, chapter on the Cloth Project.

were granted, each for a term of years, authorizing a limited number to be shipped out of the country.[1] Likewise licenses were granted for the exportation of Norfolk wools, notwithstanding a temporary prohibition.[2] The most important of all the export licenses were those for the "whites" or unfinished broadcloths. Dyeing and finishing of fine cloths had not been successfully established in England, and legislation [3] attempted to encourage the industry by drastic means. But this was continuously and almost completely nullified by licenses to the Merchant Adventurers and by smaller grants of the same sort to others. When, in the middle of James's reign, these cloth licenses were called in and an attempt was made to enforce the law, the immediate derangement of trade which resulted proved the necessity of the licenses.[4] Some of the export licenses which were used effectually to swell the lists of monopolies presented for parliamentary discussion in 1601 can hardly have been serious grievances. Such were, for instance, the licenses for the gathering and exporting of "lists, shreds, and horns" and of "ashes and old shoes." [5] When the fear of "regrators" or jealousy of foreign countries led parliaments to include refuse and discarded wearing apparel among the articles which must not leave the country, the crown can hardly be blamed for facilitating the efforts of those who sought to engage in the export of these commodities. Similarly, the jealousy which inspired the prohibition of transportation from Ireland, of agricultural and grazing products and a few simple manufactures such as linen yarns, was rightly checked by licenses.[6] It might have been better, from a purely economic view, if the restrictions had not been enforced at all, but, politically considered, special exceptions were probably preferable. Taken as a whole, the presumption is that these licenses did more

[1] Of these, the most important were those in the interest of the merchants of Chester. Consult Harl. 2104, nos. 4, 9, 23, 26.

[2] See Appendix B. An internal license also remedied in a measure the inconvenience resulting from the statute 5 Edw. VI, c. 7, directed against wool-brokers or middlemen who were supposed to enhance the price of wools, but whose services were found indispensable to the northern drapers. See S. P. D. January, 1615, lxxx, 13–16; Lansd. 48, 66; 21, 65; B. M. Add. 34324, fols. (new) 8, 26.

[3] 33 Hen. VIII, c. 19; 8 Eliz. c. 6.

[4] See below, chapter on the Cloth-finishing Project.

[5] See Appendices B to G.

[6] See Appendices B and C.

good than harm, notwithstanding the evils that must have resulted from the unequal way in which the troublesome statutes were avoided.

The case of the dispensing patents is analogous to that of the licenses for export. The grants of dispensation from penal laws authorized patentees either to issue pardons upon receipt of composition, to grant dispensations from the penalties of statutes upon receiving a fee, or to "take the benefit of forfeiture." The differences in the three forms were hardly more than verbal. Historically all grew out of the custom of providing in penal statutes for a division of the offender's fine between the crown and the informer, and the dispensing patents regularized the growing practice of collusion between offenders and informers. It will be seen that these transactions virtually enabled offenders to bargain, either periodically or once for all, for the right to break the law. Immunity might even be purchased without an individual bargain, for a patentee would gain most by establishing a fixed price so low that large numbers would be led to purchase exemption. This form of patent was nominally abandoned after the reign of Elizabeth, the withdrawal being due to the declaration of the judges who gave advice against them in 1604 when consulted by the Privy Council.[1] Yet after this "the taking the benefit of obsolete and impossible laws" was frequently heard among the grievances, for the old practice was continued in the commissions issued under James and Charles for compounding with transgressors in the name of the king himself, thus conforming with the words of the declaration of 1604.[2] Very many of the acts of Parliament which were thus intrusted to the discretionary execution of a patentee were as ill-advised as the prohibitions upon export. Thus Parliament had yielded to the popular opposition against the gig-mill, which was regarded as inimical to labor by substituting machinery for the antiquated practice of treading in the fulling of cloth, and all use of the machinery was prohibited.[3] Proclamations subsequently

[1] See Appendix M.

[2] See e. g., the following commissions for inclosures: Pat. 5 Jac. I, pt. 18 (February 16, 1608); 6 Jac. I, pt. 37 (May 20, 1608). Pat. 15 Jac. I, pt. 5 (February 28, 1618). Pat. 11 Car. I, pt. 5 (May 8, 1635); 11 Car. I, pt. 9 (November 13, 1635).

[3] 5 & 6 Edw. VI, c. 2.

permitted their use for half the process only. Later, the crown interfered by issuing a patent for the benefit of forfeiture under the act.[1] Ostensibly this was a measure of enforcement, but a consideration of the customary manner in which such deputations were enforced would lead to the presumption that the patentees accepted compositions or anticipatory fines which practically authorized the evasion of the law. In 1630, Charles attempted to reform "abuses" in the Shrewsbury district.[2] The appointment of a commissioner [3] in this district was a part of the general principle of "thorough" which characterized the king's whole economic policy. The attempt of the commissioner to interfere with the use of gig-mills was then regarded as an innovation which shows that the act had not been regularly enforced, and this is further confirmed by the serious inconveniences which followed directly upon the new policy.[4] Another unfortunate statute was designed to reform the abuses in the tanning of leather. All that subsequently appears points uniformly to the fact that the act was in every way injurious to the trade. Regulations for tanning were minutely prescribed by a body of men no one of whom seems to have possessed the slightest knowledge of the tanner's art. Very likely the conditions required could not have been successfully obeyed by a single tanner. However this may be, it is certain that no attempt could have been more misguided than that of prescribing a uniform practice, irrespective of leather, bark, and water, all of which varied in their chemical qualities in different parts of the country.[5] Different methods of preparation, moreover, were needed in accordance with the purposes for which the leather was intended. Hence of fifteen clauses in the statute only six, it was said,[6] could possibly be observed. If the law had been rigidly enforced, its repeal at an early session would almost surely have resulted. But the theory upon which the crown then acted prevented it from shifting the responsibility upon Parliament and required that the burden should remain with the executive. Discretionary powers were exercised

[1] Pat. 36 Eliz. pt. 11 (April 17, 1594), to Roger Bineon and William Bennett.
[2] S. P. D. October 29, 1630.
[3] Procl. April 16, 1633, S. P. D. ccxv, 56.
[4] S. P. D. August 1, 1633.
[5] Fleetwood to Burghley, Lansd. 20, no. 4.
[6] Lansd. 5, no. 58.

and the act remained unrepealed. Though only partially enforced, it was the foundation of subsequent regulation under Sir Edward Dyer, who was authorized to pardon and dispense with the penalties for violation of the statute.[1] Legitimate as were the grounds upon which the dispensing patents were based, it yet was true of them that their employment was most unfortunate, for they offered unusual temptations to those who dealt in them. Dyer and his deputies gained an evil reputation for extortion practised under cover of the patent.[2]

No single motive is sufficient to explain all the other numerous and diversified grants. The desire to encourage invention, the advancement of political power by means of the regulation of industry, financial considerations, and the desire to reward her servants and favorites, must all be considered as influencing the monopoly policy of the queen. The encouragement of invention continued to be regarded as one of the chief public concerns, although as the years went on this consideration had diminishing weight in patent policy. The advancement of political power was sought more particularly in the licensing patents. The extension of this system was a natural though not necessarily desirable result of the effort to nationalize the country. This end was best to be attained by unity of economic interests. At the time it was thought that uniformity was equally necessary, and supervision of industry in the direction of uniformity was part of the program of centralization. Hence the crown was predisposed in favor of any project which promised a uniform regulation. But inasmuch as patents were usually granted as a result of petition on the part of some one who had a selfish interest in the grant, the desire for national regulation was not the immediate incentive in the conferring of the privileges, and the most that can safely be said is that a petitioner was more sure of success if he could show that central control of industry would incidentally result from his privilege.

The granting of patents was, as a rule, prompted by the pecuniary interest either of the crown or of the patentee. Thus in the case of the export and dispensing licenses already considered, a very important, if not the chief motive, was the financial advantage both to the crown and the favored grantees, who divided their profits with

[1] See Appendix C.

[2] Lansd. 24, no. 70.

the sovereign by the payment of rents. That the fiscal motive animated the administration can be further shown by an examination of the circumstances attending the granting of the starch monopoly. The courtiers who successively enjoyed it were in debt to the queen, and she apparently hoped to reimburse herself by helping them at the expense of her subjects. A petition growing out of the failure of an arrangement between the first and the second patentee renders it plain that the patent was issued and reissued as a means of liquidating the debts of two courtiers whose financial circumstances were desperate. The queen joined in the general scramble of creditors to realize upon inadequate assets, intervening to prevent the performance of a contract which bears the indication of having been especially negotiated in order to make the contracting parties preferred creditors instead of the queen. The crown's financial interest alone explains the extraordinary vigor with which the Council prosecuted offenders against this particular monopoly.[1] Neverthe-

[1] Young received the patent April 15, 1588 (Pat. 30 Eliz. pt. 9). It was transferred to Pakington, July 6, 1594 (Pat. 36 Eliz. pt. 13), and reissued May 20, 1598 (Pat. 40 Eliz. pt. 16). By the terms of Pakington's patent, he was to reserve £345 a year and the residual interest remained with Young. Both patentees left the adjustment to their respective creditors, Anton and Ellis, who arranged that Young should accept a fixed sum of £500 per annum, instead of the residual interest. Ellis secured an agreement that his own claims against Young should first be satisfied out of Young's interest, but the queen interfered and required the payment to herself of the whole income, in part payment of a debt of £9000 due to her. Hist. MSS. Com. Cal. *Salisb. Pap.* v, pp. 532, 533. The profits of this monopoly were estimated as low as £400 (Lansd. 73, fols. 32–3), and as high as £7240. B. M. Add. 36767, fol. 11, and 12497, fol. 313. The lower estimate is probably the more correct. Under both patentees, the starch monopoly was the occasion of an unusually large number of summonses before the Council Table, where offenders were often simply enjoined "to give their attendance" upon the Council or some member of it until formally dismissed. See C. R. May 22, July 23, 29, November 19, 1592, February 8, November 1, 1595, January 17, 28, February 4, 1596. But prosecutions were perhaps pursued to punishment with more vigor under Pakington's patent. See C. R. February 8, September 6, October 6, November 1, 1595, January 11, 17, February 4, 6, May 1, 19, 1596. The consequences of the jealous enforcement of this monopoly and the accompanying abuses were as serious as were possible for such a commodity. The trade, originally in the hands of the Company of Grocers, was practically taken from them and they were obliged to submit entirely to the terms of the patentees in order to be allowed to resume it. Wholly unreasonable demands were constantly imposed upon them, with the alternative of forfeiture. The patentees and their deputies took advantage of their opportunity to practice all sorts of extortion under color of their privilege, and accepted bribes for lenient treatment.

less, with the exception of the patents in contravention of statutes, Elizabeth did not derive much direct profit from the administration of the monopolies. With few exceptions, the patents called for merely nominal rents, so that even if these rents were never defaulted, as they certainly often were,[1] the revenue would not have been great. Allowing for the expenses incurred by the constant necessity of executive intervention to protect patentees, there is reason to doubt whether the rents covered the outlay. Those rents that were higher than the usual merely nominal sum were designed to compensate for the loss of customs revenue by the decline or prohibition of importation.

The evil features and abuses of the monopolies owe their origin rather to the importunity of influential and unscrupulous suitors than to the fiscal interests of the crown. The very possibility of securing exclusive privileges was an invitation to those at court to join in the race for favors. The courtiers were not attracted by the patents for new inventions, leaving those for the poor and often chimerical inventors, but they sought to secure the more valuable licensing patents or else lucrative new monopolies in old industries. The frugal queen, though loath to part with her treasure, was willing to bestow valuable patents upon her pensioners, favorites,

Strype's *Stow's Survey*, ii, 177; B. M. Add. 36767, fol. 11; S. P. D. October, 1601, cclxxxii, 29; *Salisb. Pap.* v, pp. 275; Rep. July 22, 1592. The monopoly had as important industrial as commercial consequences, with the result that the manufacture was carried on uneconomically. Exclusive of the illicit production, not reached by the monopoly, the interference of the patentees confined production to a few undertakings. There were only four plants licensed for London and vicinity. B. M. Add. 36767, fol. 11. It was naturally to the interest of the patentees to countenance only a few undertakings, for their control would then be easier, but the interests of the trade were injured. The prevailing type of business organization, under the small master, was more suitable for the industry, as was proved by the fact that, after the monopoly was removed, many small concerns sprang up without increasing the aggregate production. Titus B, v, 315. The ostensible object of the patents was to prevent the consumption of wheat in the manufacture of starch, but evidence is not wanting that such starch as was made under the supervision of the patentees was made with good wheaten flour (B. M. Add. 36767, fol. 11), and those acquainted with the manufacture in this period regarded the possibility of employing bran alone as a popular delusion which was fostered by those who had no intention of foregoing the use of flour. Lansd. 152, fol. 130; Titus B, v, 315.

[1] The government often had to accept compositions for the full rents. See C. R. May 22, 1592, June 28, 1579, December 23, 1578; *Salisb. Pap.* v, pp. 525.

personal servants, petty officers and clerks.[1] It is evident that the grants to the servants of the queen's household, and to clerks, were conferred in lieu of salaries. Salaries might have been more acceptable and surely would have been better for the nation, but there was no civil list and Elizabeth had other uses for her crown revenues and for the grants which she chose to ask from Parliament. What was explained concerning Wilkes's patent for salt is typical: "The said grant was given unto him by her Majesty in some reward of his service, and is a principal part of his maintenance."[2] In the hands of the corrupt courtiers[3] the system of monopolies, designed originally to foster new arts, became degraded into a system of plunder. Projects of all sorts found advocates and, for a considerable time at least, there was no adequate machinery for investigation into the expediency of suits. The great majority of courtiers holding these privileges acted in the boldest spirit of exploitation. Having no acquaintance with the arts over which they were set, the only mission that they recognized was that of helping themselves in a mercenary and extortionate manner.

Notwithstanding the mutiplicity of patents and the abuses connected with many of them, they long escaped serious opposition. This is to be attributed to the cautious manner in which the policy was pursued throughout the reign, and to the traditional deference to the queen's will. The royal caution was displayed in the anxiety to avoid any open defiance of the common law. Although there seems to have been some attempts to forbid law suits,[4] this cannot

[1] The starch monopoly, already noted, is an instance of an established industry deliberately handed over to courtiers. Other examples are the patents for playing-cards to the "pensioners" Bowes and Bedingfield, Pat. 18 Eliz. pt. 1 (July 28, 1576); that for vinegar to Richard Drake, "groom of the privy chamber," Pat. 36 Eliz. pt. 11 (March 23, 1584); and that to Thomas Wilkes for salt. See below, chapter on the Salt Monopolies. Of royal favorites, Sir Walter Raleigh was perhaps the most liberally supplied. See Naunton, *Fragmenta Regalia*, 1641, pp. 31, 32: "Though he gained much at court, yet he took it not out of the Exchequer or merely out of the queen's purse, but by his wit and the help of the prerogative, for the queen was never profuse in the delivery out of her treasure but paid many and most of her servants part in money and the rest in grace which, as the case stood, was taken for good payment."

[2] C. R. June 5, 1590.

[3] Consult Hall, *Society in the Elizabethan Age*, for a picture of the corruption of the time.

[4] Such at least is the inference from the clauses in the patents for reference

safely be construed as a deliberate policy. Viewed in the most unfavorable light, it can be regarded only as a vague and unconscious encroachment upon the liberties of the subjects, in an entirely novel policy with respect to which legal precedents were meagre and of altogether doubtful application. What is apparently the best explanation of the arbitrary protection of patentees is more favorable. There is good ground for accepting the claim that the protection against the law was a measure of temporary expediency, although this excuse was probably unduly pressed. To the end of her reign, Elizabeth continued to display at least occasional anxiety that her patents should exist only in conformity with the law, as well as a general disposition to administer the patents with as little injury as consistently might be.[1] Originally, decisions as to grants and their provisions rested immediately with the queen and her trusted minister Burghley; but the multiplicity of suits for monopolies, and the growing appreciation of the disorders that might result from injudicious grants, led in time to a greater care in considering them, and the original practice was modified by referring petitions to the law officers of the crown for a preliminary examination as to their legality.[2] The result was that many applications were never allowed to be presented for the consideration of the queen. A significant letter to Robert Cecil complains, "And now it pleaseth you to say that monopolies are hardly obtained."[3] In the latter part of the reign, ministerial responsibility also began to serve as a check. A disappointed inventor wrote in 1596: "I hear by report there is a worthy gentleman . . . that hath now the keeping of the great seal,[4] and these suits cannot pass but by

of disputes to the Privy Council; from the queen's promise in 1597 to submit the patents to common law trial (D'Ewes, pp. 547); and from her proclamation of 1601 (Appendix J), in which she authorized any one to test the legality of the monopolies without fear of her prerogative.

That the prerogative was something to dread is shown by the fact that, in the Case of Monopolies, Fuller was able to cite only three patent cases from the entire reign, and only two of these were common law cases; the third was a Privy Council case. Noy, pp. 183.

[1] C. R. December 23, 1578, March 22, 1586, June 20, 1596, January 11, 1597.

[2] See Hulme, L. Q. R. January, 1900.

[3] Hist. MSS. Com. Cal. *Salisb. Pap.* iv, pp. 615, 616 (September 19, 1594).

[4] The new lord keeper was Egerton, who became Baron Ellesmere at the accession of James I.

his privity; and they say . . . he hath ever been a great enemy to all these paltry concealments and monopolies; and they further say of him that to beguile him with goodly shows is very difficult, but to corrupt him with gifts is impossible." [1]

But it was more especially the peculiar position of the queen as a Tudor autocrat which enabled her so long to pursue her monopoly policy without interruption. Foreign dangers and relief from serious internal strife guaranteed to the Tudors a loyalty so unquestioning that there was no effective check upon royal encroachments so long as it was apparent that the monarchs had at heart the general good; and of this there was constant proof, especially in the reign of Elizabeth. Chivalry and personal devotion also supported the queen, and she repaid this support with sympathetic tact. If she yielded sometimes to petty interests, her ambitions were wholly national. She understood national prejudices and she knew with whom political influence rested. Accordingly, she took the only wise course in religious matters, respected the common law, liberalized trade, and allied herself with the gentry and commercial classes. The power and skill of the Tudors were manifest in Parliament. The membership of the House of Commons was doubled. Elizabeth added sixty-two new borough members. All these were likely to be strongly attached to the crown as long as commercial and industrial interests were cared for. The older rural constituencies were very largely represented by lawyers resident in the metropolis. Both economic and legal interests demanded extensive and effective national government, and the result was a natural alliance between the lawyers and traders. As long as these two interests were satisfied the crown could count upon a Parliament free from opposition. It was only after the Stuarts had openly defied both these interests that Parliament began to be divided into consciously opposing parties. When the struggle came, the contest was one between the prerogative and the common law, and on the side of the law were ranged a majority of the gentry and the traders, representing the growing middle class. The legal and economic conflicts were inextricably intertwined.

The Tudors, however, did not depend entirely upon good-will; they had other resources. The initiative in legislation rested almost

[1] Harington, *Metamorphosis of Ajax*, 1596.

exclusively with the crown. Parliaments existed to vote supplies and to give sanction to royal policies. The privy councillors nearly all had seats in one or other of the houses, and the deference paid to them enabled them to influence legislation very decidedly. Thus under ordinary circumstances it was comparatively easy to silence complaints and the queen did not hesitate to use her advantage. In 1571, for instance, the Commons were directed to "meddle with no matters of state but such as should be propounded unto them." When, nevertheless, one of the members ventured to complain of licenses and monopolies, he was summoned before the Council and sharply reprimanded. At the close of the session, the "audacity and presumption" of such behavior were severely censured.[1] In 1593, the crown renewed its contention[2] that the privilege of the House was in saying "aye and no" and not "to speak every man what he listeth or what cometh into his brain to utter." The question of monopolies was again raised in the Parliament of 1597. A bill was offered in the House of Commons "touching sundry enormities growing by patents of privilege and monopolies," which was referred to a committee for investigation. This time the complaints were more graciously heard, and redress of the grievance was promised. At the close of the session the House directed that the queen should be thanked for her "most gracious care and favor in repressing of sundry inconveniences practised by monopolies and patents of privilege." And the lord keeper replied[3] to the speaker, — "touching the monopolies, her Majesty hoped that her dutiful and loving subjects would not take away her prerogative, which is the chiefest flower of her garden and the principal and head pearl of her crown and diadem; but that they will rather leave that to her disposition, and as her Majesty hath proceeded to trial of them already, so she promiseth to continue that they shall all be examined to abide the trial and true touchstone of the law." The final protest in Elizabeth's reign came in 1601.[4] This famous outburst of popular feeling is memorable as being one of the few cases in which the queen was unable to stem the tide, though here,

[1] D'Ewes, pp. 141, 142, 151, 159, 175.

[2] Townshend, p. 37.

[3] November 10, 1597, December 14, 1597. D'Ewes, pp. 554 ff. and 547.

[4] The last Parliament of Elizabeth opened October 27, 1601.

as in the few other instances of this sort,[1] she yielded with dignity. It was not until a generous subsidy had been granted that a bill was offered [2] which was described as "an exposition of the common law touching those kinds of patents commonly called monopolies." In the course of the debate which followed it was shown that the deputies of the patentees were especially obnoxious by reason of their high-handed and irresponsible conduct.[3] Francis Bacon was one of those who opposed the agitation, and he attempted to defend the monopolies as being both reasonable and legal. He insisted that in considering the bill for defining the rights of the crown with respect to patents, the Commons were encroaching upon the prerogative. Other speakers followed, showing the distress that was caused by the patents for salt and other commodities, and the annoyance of less important monopolies. Laurence Hide, the author of the bill, in reply to Bacon defended the proposed measure, citing a precedent from the time of Edward III. Respecting the queen's prerogative Hide said, "As I think it no derogation to the omnipotency of God to say He can do ill, so I think it no derogation to the person or majesty of the queen to say so." At the close of Hide's speech the debate turned largely upon the question whether the House should proceed by petition or by bill. The conservative members who advocated the former course were overborne by those who showed the futility of further petition, for it was pointed out that in 1597 petition had only resulted in a promise which had not been performed. Sir Walter Raleigh, who held several monopolies, in the course of the debate defended himself and his monopolies, but offered to assent to their cancellation if it were desired by the House. Bacon again argued against the bill, pointing out its inconsistency in making an exception in favor of corporations.[4] Fleming, the solicitor-general, attempted an explanation of the neglect of the crown to make the reforms promised in 1597, but in answer to his plea, a list [5] of patents which had been granted in the interval since

[1] For two other instances, see Prothero, *Statutes and Constitutional Documents*, 1558–1625, pp. xcv and 118–120.

[2] November 18, 1601.

[3] Townshend, pp. 224, 230.

[4] See Appendix H.

[5] See Appendix E. This list, though inaccurate, was not challenged, and has since been frequently quoted by those who have discussed the monopolies.

the last Parliament was exhibited. Secretary Cecil objected to the citing of precedents from the time of Edward III, "when the king was afraid of the subject." He rebuked the speaker for entertaining bills directed against the prerogative, contrary to the injunction of the queen, "for her Majesty's ears be open to all our grievances and her hand stretched out to every man's petition." Finally he urged discrimination between good and bad monopolies. He was, however, unable to calm the agitation, and complained that the discussion was conducted in so unreasonable a mood that none could get a hearing in favor of the patents. "This," he said, "is more fit for a grammar-school than a parliament." At length the queen, perceiving that Cecil and Bacon were unable to calm the storm of opposition, and would very probably be unable to prevent the passage of the bill, adopted a thoroughly characteristic course, and sending for the speaker, she instructed him to inform the House that she herself proposed to reform the abuses of the monopolies.[1] The Commons were content to entrust to her the redress of grievances. Upon the reconciliation she at once summoned them to listen to a speech, which was a masterpiece of eloquence and dignity, and in which she avowed that her whole ambition as sovereign was that she might be an instrument for her subjects' welfare.[2] This speech and the proclamation which she had issued against the monopolies, according to her promise, were her last great public acts.[3] The proclamation [4] summarily revoked the more obnoxious of the patents, and those that remained were left to the common law free from any clause of restraint, thus entrusting to the courts of law the responsibility of deciding what grants should be allowed to stand.

Within a few months the Queen's Bench was given an opportunity of laying down the law. As soon as the proclamation had guaranteed immunity to those who sought to test the validity of the queen's patents, a London Haberdasher infringed the patent held by

[1] Townshend, pp. 232–249.

[2] November 30, 1601. See Appendix K, The "Golden Speech" of Queen Elizabeth.

[3] "The principal good this Parliament has wrought is that patents for monopolies are suspended, but this is done by proclamation and not statute, because her Majesty's mercy and grace should be the more superabundant. You could not believe what contentment the Commons receive at it." S. P. D. December 12, 1601.

[4] November 28, 1601. See Appendix J.

Edward Darcy for the sole importing, making, and selling of playing-cards. Darcy instituted an action at law which has become famous as the leading Case of Monopolies.[1] The case was argued upon three occasions and the litigation was thus carried on till Easter term, 1603,[2] when the decision was handed down, just after the queen's death. In the course of these proceedings, the chief arguments on behalf of Darcy, the plaintiff, were made by Coke and Fleming, the law-officers of the crown. On behalf of the defendant, the chief argument was made by Fuller. For the prosecution it was argued that the grant was good because playing-cards were not legitimate merchandise, but merely a "vanity." It belonged to the queen, by virtue of her prerogative, to take away the abuse. The queen, it was claimed, had jurisdiction over recreation in the social interest, and she might at discretion either suppress entirely or tolerate in part any vain amusements.[3] It was admitted that a patent ought not to change the law, nor should it be contrary to justice or common right; it ought not to impose upon the subject "an unprofitable charge, . . . nor do wrong to the inheritance, liberty, or trade of the subject;" but, inasmuch as the trade of card-making was involved with "the vices of deception by servants of their masters, and the misemployment of time which ought to be applied to other industries and not to such enormities, the queen might prohibit it by patent."[4] To arguments such as these it was not difficult to find an answer. Fuller contended that it was not *malum in se* for the subject to play at cards, but wrong only to those to whom it was expressly prohibited by statute. He noted the fact that the plaintiff, in his pleadings, had represented that he had imported 4000 gross of cards "for the *necessary* use of the subject." He also showed that this patent was rather a license than a restraint upon card-playing. He argued that all patents concerning the crown and subjects were limited to the exposition and allowance of the judges of the law, and that the judges stood "indifferent" between the king and subject. Cases were cited proving that the judges were not bound to construe grants in favor of the crown. If the queen could not take 12d. from a subject, even to support a war, without act of Parliament, much less could she take away

[1] Darcy *v.* Allen.
[2] Moore, pp. 671, 672, 675.
[3] Coke, xi, pp. 84 ff.
[4] Moore, p. 674

any moderate recreation from her subjects, without the same authority; "for commonwealths were not made for kings, but kings for commonwealths." [1] The one exception to the rule against monopoly which Fuller admitted has become a legal classic. Here was clearly stated, for the first time, the principle which has since been the accepted criterion of the legitimacy of a patent: "Now therefore, I will show you how the judges have heretofore allowed of monopoly-patents, — which is that when any man by his own charge and industry, or by his own wit or invention doth bring any new trade into the realm, or any engine tending to the furtherance of a trade that never was used before; and that for the good of the realm; — that in such cases the king may grant to him a monopoly-patent for some reasonable time, until the subjects may learn the same, in consideration of the good that he doth bring by his invention to the commonwealth, otherwise not." [2] The decision in the case confirmed Fuller's contention. It was held that all trades that "prevented idleness" were useful to the commonwealth; that there were three inseparable incidents to a monopoly: the price would be raised, the commodity would deteriorate, and former artisans would be impoverished, — hence this monopoly was prejudicial to traders and others. It was declared that the queen had been "deceived" in her grant and that the patent was a dangerous innovation, contrary to common law.[3]

The common law had thus proved an adequate remedy against monopolies. Though legislation subsequently became necessary, this was not to supply a deficiency in the law, but to reassert the law which was being neglected, evaded, and defied.

[1] Noy, pp. 174–185. [2] Noy, p. 182. [3] Coke, xi, pp. 84 ff.

CHAPTER II

FROM THE CASE OF MONOPOLIES TO THE STATUTE OF MONOPOLIES, 1603–1624

DURING the first few years of his reign, James I was little troubled by parliamentary opposition to patents of monopoly. Shortly after his accession, he published a proclamation [1] condemning the monopolies and ordering their suspension until the Privy Council could consider them. In March, 1604, James opened his first Parliament and ended his speech [2] with a protestation or an apology for his conduct in the matter of gifts, honors, and rewards. In form it was an excuse for his lack of liberality, but his plea of prudence and economy must have appealed strongly to the Commons, as it was an indication of an intention to govern without lavish bounty to favorites. With pledges of this sort, the House of Commons was content and turned to subjects of greater urgency, such as privileges of its own members, and the foreign trading companies. Internal monopolies were neglected, owing to the confidence that the difficulties with respect to them would soon be adjusted.[3]

Sincere efforts were at first made to reform the abuses. An intricate mechanism of investigation was devised, which, if it had been properly used, might have prevented most of the grants which were inexpedient or legally doubtful. An important constituent of the investigating machinery was the permanent body known as the Commissioners for Suits, which was instituted soon after the king's accession.[4] Of the commissioners, Sir Francis Bacon and Sir

[1] May 7, 1603. See Appendix L.

[2] *Parl. Hist.* i, pp. 977 ff.

[3] *Parl. Hist.* i, pp. 996 ff.; C. J. i, pp. 218 ff.

[4] "An open placard concerning the causes of suitors to his Majesty and their Lordships wherein it is ordered that Tuesdays in the afternoon shall be appointed for that purpose and that six of the Lords at the least shall meet to consider and give answer to suitors that shall prefer petitions themselves [as well] as those that shall be referred unto them from his Majesty; provided that they shall entertain no suit whereby any cause depending in a court of justice may be interrupted,

Julius Cæsar were the most prominent. They were on nearly every reference, whether as members of the commission or not; and as the public careers of both practically extended over the whole reign, their connection with the patents was long and intimate. Bacon, moreover, as attorney-general and subsequently as lord keeper, came into contact with every patent that was issued in the latter part of the reign. Other referees very frequently employed were the Earl of Salisbury, secretary of state and later lord treasurer, the Earl of Dorset, Salisbury's predecessor as lord treasurer, the lord chief justices of King's Bench and Common Pleas, the barons of the Exchequer, the lord admiral, the lord mayor and the recorder of London, the lord privy seal, and the lord chancellor. The attorney- and solicitor-generals were also often named on the committees of reference, and had the subsequent duty of drafting or sealing the patents.[1]

It was not long, however, before the true character of the king was revealed, and it was seen how ready he was to yield to the importunities of suitors, notwithstanding the elaborate machinery which he had interposed between them and himself. As the grants began to multiply, the opposition in Parliament became more pronounced, and in the second session (January to May, 1606) the patents of monopoly became one of the most important subjects handled by the Committee of Grievances, — a new political engine destined to give the early Stuarts much trouble and to make the monopolies one of its most important concerns.[2] At the opening of the third session (November, 1606), the king attempted to satisfy the Commons by an elaborate reply [3] to a petition which had been submitted at the end of the second session. He insisted upon retaining a few of the more obnoxious patents, as a matter of right,

unless upon extraordinary occasion the same be referred unto them from his Majesty; and for this purpose a commission under the great seal was granted." B. M. Add. 11402, May 30, 1603. In 1611 the commission included the following names: Herbert, Cæsar, Parry, Bacon, More, and Cope. Rem. June 27, 1611.

[1] For referees, consult Lansd. 266 for the years 1603–15, and for subsequent years, the Council Registers.

[2] Among the patents considered in this session were those for the licensing of wines, the preëmption of tin, the importation of logwood, and the searching and sealing of the new draperies. See C. J. April 9, 1606.

[3] See Petition of Grievances, S. P. D. July 7, 1610. See also C. J. i, pp. 316–318.

but promised considerate execution. The patent which was then regarded as the most serious grievance, the grant to the Duke of Lennox for the sealing of new draperies, was defended, but assurance was given that it would be subjected to the judgment of the courts. On the seventh of July, 1610, shortly before the close of the fourth session, a new petition of grievances was drawn up, couched in respectful language but plainly manifesting disappointment at the unsatisfactory way in which the promises had been carried out. The petition represented that the grievances formerly complained of were not only not redressed but were exceedingly aggravated. Particular remonstrance was made against the unwillingness of the crown to fulfil its pledge that certain patents should be judged in the courts. The strongest protest was directed against the patent for the alnage of the new draperies. It was urged that since the second session the abuses of the deputies of Lennox, instead of being reformed, had increased without restraint or punishment. "Disorders in the execution are so far from being reformed that they multiply every day, to the great grievance and oppression of your Majesty's subjects, and those of the poorer sort, who living hardly upon these manufactures are by the forementioned disorders greatly hindered and some utterly undone, as hath appeared in the particulars presented unto us." [1] Three days later the

[1] S. P. D. July 7, 1610.

The original patent had been granted by Elizabeth, in 1594, to George Delves and William Fitzwilliams. Their supervision included such fabrics as worsteds, bays, says, fustians, and frisadoes. A subsidy was to be imposed upon them which the alnagers were to collect for the crown, while they were to exact a fee for their sealing. Defective draperies were to be destroyed, and a penalty was imposed for exposing cloths for sale without seal. One of the new king's Scottish favorites, the Duke of Lennox, "procured" the surrender of this patent and a new one was issued to him, covering eighty new kinds of cloth. Soc. Ant. Proc. Coll. September 16, 1605. The duke's deputies were charged with violent and unauthorized seizure of cloths, with blackmail and extortion upon the poor, with exacting annual rents from those in better circumstances and able to pay well for the privilege of being unmolested. The deputies were also charged with instituting warrants and suits with purely malicious purpose, and delaying, under pretext of pressure of business, to search and affix seals to cloths of those who did not offer special bribes to expedite the examination, — the delay causing ruinous loss, since owners were thereby too late for the market times. S. P. D. August 18, 1611. After the re-issue of the patent, in 1613, complaint was made of a practice that had become common, which must have defeated the public object of the search, for the deputies were said to

king replied to the articles of grievance in his usual style, and promised that lawsuits should be expedited. It was at this time that he found it expedient to publish his celebrated *Book of Bounty*,[1] which, later, was most adroitly used against him by the popular party. In this he solemnly renounced all intention of granting fresh patents of monopoly or privilege and forbade any to approach him with projects; the law of England and his own royal pleasure were alike opposed to such grants. How difficult it was to please the Commons with his most solemn protestations, James learned in 1614 when his second Parliament found material and opportunity for much discussion[2] upon the subject of monopolies. But this ill-fated Parliament was dissolved before it had accomplished anything.

The interval between the first and the third Parliaments of James was characterized by the greatest diversity in policy and counsels. The irregular methods of dealing with patents gave to them an insecurity that impaired their potential or speculative as well as their actual values, and this must necessarily have resulted in diminishing whatever social usefulness they might otherwise have had. Grantees constantly complained of the necessity of contesting projects that were being pressed in opposition to their own privileges. In the notable case of the glass patents an annual rent of the unusually large sum of £1000 was exacted, which was distributed in the shape of annuities or pensions to former patentees whose rights were set aside.[3] In the case of a salt monopoly there was an example of the opposite method of quieting differences. A new patent was set aside and its promoter, in recognition of his

have resorted to the device of openly offering for rent stamps by means of which drapers might seal their own cloths. Petitions and Parliamentary Matters, 1620–21, Guildhall Tracts, Beta, no. 16 (old no. 25). (This document, the full text of which I have reproduced in the *Quarterly Journal of Economics*, August, 1906, bears evidence of the beginnings of the cotton industry in the latter years of Elizabeth.) Abuses continued under this patent in the reign of Charles (S. P. D. 1628, cxxvi, 67, 68), during the Interregnum (*Golden Fleece*, by W. S., Gent., 1656), and later. See Edward Misselden's letter, S. P. D. April 17, 1621, for similar sale of seals for the old draperies.

[1] The *Book of Bounty* has been republished, with comments on its history, in Gordon's *Monopolies by Patents*, 1897.

[2] C. J. i, pp. 472–506. The glass patents received special attention.

[3] C. R. July 11, December 12, 1614. See below, pages 71, 76.

ingenuity in introducing improvements, was given a share in a fresh concession, which was substituted for the original patent enjoyed by the old patentees. At the same time, on the advice of Lord Chief Justice Coke, a third patent was revoked as "void at law," but a recompense for expenses was allowed out of the profits of the renewed patent.[1] In several instances, after a patent covering a whole industry had been granted on the ground of a recent improvement, it was found necessary to suspend for a time the exclusive rights, owing to the inability of the patentees to satisfy the market demands.[2] The Council was not, indeed, successful in binding itself. On one occasion, to cite a by no means isolated instance, it resolved that "hereafter no petition be entertained by this Board to the discouragement of the present patent." Yet only a few years later the Council revoked a second and created a third monopoly in the same article.[3] Its opportunist policy is further illustrated by the ready way in which patents were annulled "for reasons of state." The inconveniences that had arisen between 1590 and 1600 by reason of some of the patents had led to the general introduction in subsequent patents of a clause providing for revocation if they were found "inconvenient to the commonwealth."[4]

[1] C. R. February 27, 1615.

[2] The Council authorized a commission to inquire into and adjust the price of glass sold to the London glaziers who complained of excessive scarcity. C. R. April 23, 1617. Isaac Bungar was licensed to continue temporarily his glass-making, accounting to Sir Robert Mansell, the new patentee, who was unable to provide the entire market. C. R. July 6, 1617.

[3] "Elliots and Meysey, patentees, received their grant after divers thorough proofs and have since expended much, — their patent is now infringed by others, and Palmer, a Dutchman, also seeks a patent for steel very prejudicial to the patentees and the realm." . . . "Resolved that hereafter, no petition be entertained by this Board to the discouragement of the present patent." C. R. November 29, 1617. Later, Elliots and Meysey complained of an infringement "contrary to an order at the time Palmer's patent, fraudulently obtained, was cancelled." . . . "Ordered that notice be taken of the information and the attempts suppressed." C. R. May 12, 1618. . . . But "upon complaint of the deputies of the United Provinces against the violation of free trade according to treaties, in the patent to Sir Basil Brooke, Kt.," an investigation was ordered and the attorney-general was instructed to institute quo warranto proceedings. C. R. July 2, 1619. Finally, the Privy Council voted to further a petition for still another privilege for steel sought by Dr. Robert Flood. C. R. September 27, 1620.

[4] E. g., see instructions to the attorney-general to insert clause for revocation by any six of the Council, in the patent for smalt. B. M. Add. 11402, June 11, 1605.

In consequence of the opportunity thus afforded, the government assumed an attitude that was as erratic as it was indulgent. Grants which could be so easily revoked might be all the more readily and safely passed, and, on the other hand, they were recalled whenever this was demanded by expediency and especially by the necessities of foreign diplomacy.[1] The reform in monopoly administration, the increased red-tape, from which so much had been hoped at the beginning of the century, demanded for even partially effective operation a watchful and conscientious supervision. This was given by Lord Keeper Ellesmere, who in 1596 had asserted the responsibilities of his office,[2] and under James continued to be the most uncompromising enemy of all suspicious projects and monopolies. His removal from office, in 1616, was occasioned by his refusal to sanction certain patents desired by the king's favorites.[3] Bacon, his successor, was guided by no similar moral or legal scruples, and his complaisance produced its natural effect in a lax administration of the system. The middle of the reign, therefore, marked a distinct turning-point for the worse, both in the character and in the number of the patents.[4]

The king's disappointment over the withholding of parliamentary

[1] The Playing-card makers sought the office of searcher and sealer for Sir Richard Coningsby. The petition was referred to Suffolk, Northampton, and Worcester, Treasury Commissioners, who approved, provided it should not prejudice the French treaty. The Commissioners for Suits were satisfied on this point, and the patent was issued. Soc. Ant. Proc. Coll. July 21, 1616. Later, the Privy Council announced the suspension of the patent and explained that "reasons of state" made it "unwise to press the informations against the merchants trading to France." C. R. December 20, 1617. Similarly the Pinners' monopoly was practically nullified. See Unwin, p. 167, quoting C. R. October 23, 1618, and March 21, 1619. See also C. R. July 22, 1619: "At the instance of the deputies of the States-General of the United Provinces, the Lords are required by the king to consider the patent for prohibition of importation of pins contrary to treaties of free trade." . . . "The attorney-general is ordered to bring in a writ of quo warranto or scire facias for avoiding of it."

[2] See above, pages 18 and 19.

[3] S. P. D. February 23, 1614; Gardiner, iv, pp. 3, 11.

[4] "For proclamations and patents, they are become so ordinary that there is no end, every day bringing forth some new project or other. In truth, the world doth ever groan under the burden of these perpetual patents, which are become so frequent that whereas at the king's coming in there were complaints of some eight or nine monopolies then in being, they are now said to be multiplied by so many scores." Chamberlain to Carleton, S. P. D. July 8, 1620.

supplies in 1614, and the pressing need for replenishment of the Exchequer, led to reckless and defiant financial expedients. If Parliament would not grant subsidies, no effort should be made to conform to its wishes, and thus, it was hoped, the crown might gain more than by constitutional government. At the time of the dissolution of the first Parliament in 1610, there seems to have been a strong tendency among the ministers to favor an independent financial policy. Because of the temporary check to their schemes, from the apparent inadequacy of their resources, the Addled Parliament assembled. But the attempt to conciliate the Commons had failed, depriving the king of a parliamentary revenue that had averaged £100,000 a year ;[1] and the search for other sources of revenue, monopolies among the number, was thereby greatly stimulated. The experience of Elizabeth's dealings with monopolies was repeated. So far as revenue from the patent system was concerned, the attempt proved a complete failure. The most ambitious scheme for supplying the Treasury from the profits of monopoly was the alum project, which resulted so disastrously that the king was a loser by many thousand pounds.[2] The three projects of the Buckingham ring — the licensing of inns, that of ale-houses, and the gold and silver thread monopoly — failed to contribute much if anything to the Exchequer.[3] The subsidy of the new draperies yielded the king only £100 annually, and the contributions from other patents were trivial in amount.[4] Thus, although James frankly attempted to manipulate industries in the interest of his revenue, his schemes were so ill-advised that regulation entailed greater expense than it returned.

In 1621 a new Parliament had to be summoned, and, with the difficulties besetting the crown at home and abroad, the time seemed propitious for the reforms which had so long been

[1] Prothero, p. lxxxiii.

[2] See below, chapter on the Alum Works.

[3] See Gardiner, iv, ch. 33.

[4] Gardiner, in Archæologia, xli, p. 226, and in his *History*, iv, p. 21, in attempting to show how little was the fiscal gain from monopolies, really overstates the annual Treasury receipts. Excluding the alum and glass rents, which yielded no net profits, he estimates the crown revenue from the patents at about £900. His authority is S. P. D. cx, 35, August 27, 1619, an obviously inaccurate exhibit. Better statements in Somers, *Tracts*, ii, pp. 364–400, and Sloane, 2904, which

demanded in vain. A fair beginning was made in the proceedings against the three patents of the Buckingham ring. Of these Sir Giles Mompesson and Sir Francis Michell were the most active agents, though they long had the support of their principals, the Duke of Buckingham and his two brothers, Sir Edward and Christopher Villiers. The House of Commons investigated the abuses under each of the patents in turn, and excitement rose so high that Michell was ordered to punishment, by so illegal a procedure that the Commons were obliged to retract and allow him to be punished by the upper House. He was degraded from knighthood and perpetually excluded from public office. Mompesson escaped punishment by flight, but the duke and his brothers, on account of their power and influence, avoided impeachment. The three obnoxious patents were revoked by proclamation, and, shortly after the close of the session, eighteen other monopolies were cancelled while seventeen were offered to the test of the common law.[1]

The opposition to the monopolies in 1601 had done little or nothing to discredit the ministers or officials, but the outcome of the struggle had demonstrated how difficult it was to attack the monarch in person. Now that it was once more possible to urge grievances, the leaders of the popular party took the course which proved to be the effective one, passed over the irresponsible head of the state and turned against his responsible agents, the officers of state and the referees. The public men who were thus attacked had doubtless miscalculated the force of opposition, but they could not have been surprised that it was directed against them, for most of them had anticipated it in the pains which they took to satisfy themselves of the legality of the grants which they authorized. In the impeachment proceedings an institution was revived which had lain dormant since the days of Henry VI. Michell and Mompesson were only contemptible offenders, but the indignant Commons did not stop

are also for the year 1619, agree with each other, and harmonize with Harl. 3796, fol. 68, for the year 1616–17. Alum, glass, and gold and silver thread rents were not net gains; the imposition on sea coal and the subsidy collected on the new draperies were taxes which would have been levied even if there had been no monopolies. Hardly £50 was annually derived from the true monopoly rents.

[1] See Appendix O. The account here given of the proceedings in the Parliament of 1621 is based upon Gardiner's *History*, iv, chs. 33–35, and his *Four Letters of Lord Bacon* in Archæologia, xli.

here. They ordered an investigation into the conduct of the referees of the obnoxious patents, and it was only after both James and Buckingham had solemnly disavowed the excesses of the nominal patentees and promised redress that the proceedings against the referees were allowed to drop. It is, however, well recognized that the impeachment of Bacon was very largely inspired by the ill-feeling toward the man who was most responsible for the objectionable patents, because of his advice as attorney-general, his favorable opinions as referee, and his sanction as lord keeper and lord chancellor.

In the second session, at the close of the year 1621, the House of Lords threw out a bill against monopolies,[1] but this appeared to be from no unfriendliness to the purpose of the measure; the objections were merely based upon its form, which was thought to be unflattering to the king.[2] Hope was therefore felt that a bill would soon be passed through both houses. As far as it is possible to judge from the meagre reports [3] of proceedings in the last Parliament of this reign, the Statute of Monopolies was passed in both houses without much difficulty except as to its form. The results of the final conference of the joint committee of the two houses were adopted by the Lords on the twenty-second of May, 1624, and by the Commons three days later.[4]

Just as the promises and plans of reform in the matter of grants were the last parliamentary achievements under Elizabeth, so the Statute of Monopolies was the final legislative achievement of the reign of her successor. This was not only the last, it was the most important law passed under King James.[5] Its significance was not so much due to radical innovation as to the emphatic parliamentary sanction which it gave to principles already accepted at common

[1] L. J. December 1, 1621.

[2] L. J. December 3, 1621.

[3] L. J. iii, pp. 261–412; C. J. i, pp. 670–794. Consult indices, art. "Monopolies."

[4] L. J. iii, pp. 400 b; C. J. i, pp. 794.

[5] "The legislation of James I did little more than follow out the lines laid down by his predecessor. His Parliaments spent much more time in the defense of their privileges and in discussions which led to no immediate legislative results. It does not follow from this that their work, regarded from the constitutional point of view, is less deserving of attention. In the time of James I it was more essential to assert constitutional principles and to maintain parliamentary rights than to pass new laws or to create new institutions." Prothero, pp. lxii–lxiii.

law. The preamble recited that the king's *Book of Bounty* had stated "the ancient and fundamental law" against monopolies. The statute then declared that all monopolies, commissions, grants, licenses, charters, and patents for the sole buying, making, working, or using of any commodities within the realm were contrary to law. It was furthermore insisted that the validity of all grants should be determined according to the common law practice, and the penalties of praemunire were invoked against all who should attempt, by procuring any order or warrant, to stay the execution of the judgment of a law court.[1] The important exceptions, however, which were authorized by the act, opened a new chapter in the history of the monopolies.

[1] The text of the statute is given in full in Appendix A.

CHAPTER III

FROM THE STATUTE OF MONOPOLIES TO THE LONG PARLIAMENT, 1624–1640

The Act of Monopolies excepted several classes of grants from its condemnation. It sanctioned monopolies of new inventions for fourteen years, and of these a very considerable number were granted by Charles I, patents for new processes being particularly numerous.[1] With these privileges the crown did not particularly concern itself after passing them. Their political importance lay in the fact that it was possible by virtue of this exception to continue the practice of reducing settled industries to monopolies under cover of technical improvements. Existing monopolies also, some of which were specifically named, were not to be prejudiced by the statute if they had been granted for new inventions for not more than twenty-one years. This reservation the Privy Council interpreted as a direct sanction for the particular monopolies named, and, on this pretext, quashed legal proceedings to test the legality of these grants,[2] although the statute had explicitly directed that they should stand in the same position as before the statute, "and not otherwise." It is true that suits at law in such cases had been forbidden before the enactment, but there was certainly no authority for emphatically claiming the warrant of the statute.

The act of 1624 was, however, weakest in its failure to grasp the significance of the trend of monopoly toward corporate form. From the accession of Elizabeth to the Civil War there was a process of gradual extension of monopoly privileges from a single individual to a group formed into a partnership or into a company. The usual form toward which the monopolies moved in their organization was that of a rudimentary joint-stock company. While the one-man monopoly was thus expanding in its organization, the com-

[1] Consult Specifications-calendar for the years 1625–1640.

[2] See below, page 77.

panies of craftsmen or masters during this period were contracting, exchanging individual for collective trading, and subordinating the many to the rule of the few. Thus the companies, whose connection with the past was theoretically continuous, and the patentees, who had had their origin since the accession of Elizabeth, approached one another in many of their most essential points, till in the reign of Charles the distinction between charters and patents lost practical significance. With the assimilation in organization there went a corresponding assimilation of function. The companies existed theoretically for regulation, while the patentees were originally authorized for exploitation, but this difference became of less and less importance, for as the patents multiplied they tended more and more to encroach upon established industries where their intervention could, for the most part, only be regulative; while on the other hand, the companies, as they tended to become more rigidly exclusive, aimed at industrial exploitation. Thus, as will appear in the following pages, the Soapboilers' Company of Westminster was an incorporation of a group of patentees originally formed to exploit an invention; but they soon took over the regulation of all soapmaking and thus virtually secured a monopoly of all soap production. On the other hand, the Company of London Soapboilers, who were incorporated to buy out the Westminster Company, were originally a group of independent masters, but after purchasing their right to reënter upon their trade, they exercised their rights of search and apprenticeship in such a way as to concentrate the production of soap in a few hands, and it would appear that even within the Company the trade was organized under a small group of merchants.[1] This growing likeness both of organization and of function between patent and charter privileges was due primarily to economic causes, — partly to the inherent centripetal tendency of privilege, partly to the need of capital. It was owing to the latter cause that the simple organization of a monopoly under a single head had to be expanded into a corporate concern in which the capital was furnished by a number of persons. It resulted from both the former and the latter causes that the companies of small masters found it either expedient or necessary

[1] See below, chapter on the Soap Corporations; *The Soapmakers' Complaint*, cited on page 126; also S. P. D. [August 23], 1653.

to allow their industries to be subordinated to the few who either within or without their organization were able and ready to contribute the necessary capital. The partiality of Parliament for the old order, its prejudice in favor of the industrial security and independence of the small master, blinded it to the fact that the arbitrary protection of companies of craftsmen was a policy of monopoly in disguise, and the privileges of these companies were therefore exempted from the condemnation of the statute.

It will be remembered that in 1601 Bacon had pointed out the inconsistency of the parliamentary bill which made an exception in favor of corporations.[1] The crown, no less than Parliament, was bent on protecting the small masters, but it favored these monopolies on principle and not as an exception. When, therefore the statute exempted the companies of craftsmen, the reactionary royal policy was continued under the name of Corporations. The companies of the normal sort, growing out of the craft gilds, owed their origin to municipal recognition, frequently confirmed by royal charter. Their jurisdiction in any case continued to be only local. But, even before the enactment against monopolies, there had arisen, under crown patronage, a new group of companies enjoying a national rather than a local jurisdiction. These not only owed nothing to municipal recognition, but very generally aroused local hostility. The London records during the reigns of James and Charles constantly bear witness to the opposition which these creatures of crown patronage excited on account of their encroachment upon chartered liberties of the city, and the hindrance which their exclusive privileges gave to older companies. A single illustration will serve to show that it was not the act of 1624 which first occasioned the creation of masters' companies to take over national monopolies. The Starchmakers' Company is a good early example of the Stuart policy of erecting corporations with a narrow and exclusive membership, but with such wide powers as to subordinate an industry throughout the whole country to the direction of a few men in the metropolis. The incorporation of this company was not accomplished without some difficulties. The projectors desired a charter sanctioned by king, courts, and Parliament.[2] The judges were unofficially consulted but would not approve the charter with

[1] See above, p. 21.

[2] Titus, B, v, fol. 249.

exclusive privileges unless the making of starch from wheat flour were prohibited by act of Parliament. But a bill brought into Parliament was indefinitely committed after second reading, and it was necessary to be content, therefore, with the royal sanction alone. This was secured by a bargain, in accordance with which the following arrangement was effected. A proclamation was issued declaring that great mischief had resulted from the late queen's revocation of the starch monopoly, and the manufacture was thenceforth to cease.[1] Then a subsequent proclamation authorized the manufacture in certain houses under the supervision of commissioners.[2] Shortly afterward the London starchmakers concerned in the project were duly incorporated on the conditions which they proposed, commissioners were appointed, and an imposition was laid upon foreign starch.[3] The Grocers protested vigorously against the Starchmakers' Company.[4] They showed that great inconveniences were resulting from the monopoly in a few hands of the manufacture of starch, prices having been doubled; they appealed to the traditional right of a freeman of any London company to exercise any trade. Frequent proclamations were issued to reaffirm the prohibition to all not of the company.[5] Like many of the corporate monopolies of the period, this one had a checkered career. It was suspended in 1610, and all domestic manufacture forbidden.[6] This prohibition caused even more complaint than the monopoly, especially from the Grocers, and the attempt at its enforcement was apparently soon given up. Within two years it was proposed to reincorporate the illicit manufacturers.[7] In 1619 a commission was issued to license some of those who were disobeying the proclamation,[8] and in 1622 the Starchmakers' Company was reconstituted by incorporation of the licensees, notwithstanding the protests of the Grocers and the city of London.[9]

[1] S. P. D. Add. (1606?), xxxviii, 105.
[2] S. P. D. Cal. August 23, 1607. Proc. Book, p. 151.
[3] S. P. Docq. October 21, December 23, 1607, March 14, 1608.
[4] Rep. February 4, 1608; Rem. February 5, 1608.
[5] For example, R. O. Proc. Coll. no. 8, July 5, 1608.
[6] Proc. Book, pp. 220, 232. January 10, May 21, 1610.
[7] Lansd. 152, fols. 118, 120, 122, 124, 128.
[8] Grant Book, p. 285. June 16, 1619.
[9] R. O. Proc. Coll. no. 101. May 16, 1622.

Incorporation, however, reached its climax after the act of 1624, and especially during the policy of "Thorough" from 1635 to 1640. One of the boldest plans was to reduce to company management and regulation all the traders in the suburbs of London.[1] All traders and artisans who did not already belong to a company were to be obliged to join the new company. Entrance fees and fines were established and, not least important, rents for the crown. There was to be a general restraint upon all from exercising any trade, unless free of this or of some London company. The scheme had for its excuse the jealousy and friction which always existed between the members of companies and their rivals, who settled in the suburbs free from company jurisdiction and drove their trade unhampered by rules. Three other projects will serve to illustrate the attempt to centralize the regulation, if not the production, of certain articles. The Playing-cardmakers in London and within a radius of ten miles were incorporated, with the right of search throughout England. Whatever cardmakers were without the corporation would fall in the general fate of all independent producers whose work was subject to the inspection and sealing of competitors. A rent of 12s. per gross was reserved to the king, and another 12s. per gross was to be exacted as a fee for sealing. Later, the king undertook to engage directly in the business. By the new indentures, the king covenanted to purchase of the company a weekly quantity of cards. The king expected to sell at an advance which would yield him £5000 or £6000 annually.[2] Similarly, the London Silkweavers, incorporated in 1631, were allowed by their charter of 1638 to extend their control over the whole kingdom. This was a more serious matter than in the case of the Cardmakers, for Canterbury was one of the oldest centres of the silkweaving industry. The Canterbury and other silkweavers were required to join, or be "translated" to, this company, which was to enjoy a rigid monopoly, in return for which the company was to pay a rent of 8d. per lb. from native weavers and 12d. per lb. from resident aliens. It was agreed that the broad

[1] S. P. Docq. April 8, 1636; Soc. Ant. Proc. Coll. February 24, 1637.

[2] S. P. D. May 15, 1637, October 18, 22, 1628; S. P. D. ccclxxvii, 64, February, 1641; clv, 62, 1629; clxxxv, 18, February 17, 1631; Docq. April, 1637; Unwin, pp. 144, 145.

loom, recently invented, should be suppressed.[1] The case of the Pinmakers of London and England and Wales was an attempt to reconstitute a company originally chartered under James in 1605, after which date there had been a series of attempts to attain monopoly privileges,[2] until at last the Pinners' Company had been granted the preëmption of all pins imported, as well as the sole right of manufacture in London and its vicinity.[3] These privileges were, however, shortly afterward suspended to conciliate the Dutch, and the company was not revived until 1635, when a new charter of incorporation was granted, conferring the usual rights of searching, sealing, and making ordinances. Importation was now strictly forbidden. It was stipulated that the price of pins should not be raised.[5] By this charter, all the pinmakers of the kingdom were subordinated to the London company. The monopoly was still more thoroughly concentrated in 1640, when the king himself undertook to supply capital to the extent of £10,000, but he farmed this function at once for ten years.[6] The results of the schemes here described were very meagre. In most instances a derangement of the industry affected was the only outcome. Having their inception so shortly before the Civil War, it was impossible that many of them could have had even a fair trial. Some corporate monopolies which had more vital strength are reserved for treatment in subsequent pages, while those here considered are of interest chiefly as exemplifying the comprehensive policy of industrial control which the crown and Council endeavored to administer.

Except upon fiscal considerations, it is difficult to see how the most thorough of reactionaries could have sanctioned the unprecedented extremes to which corporate regulation was carried in many cases. But Charles was dependent upon unparliamentary

[1] Docq. May, 1631, May, 1638; S. P. D. [August 25], 1639. It is interesting to note the statement that the tax levied by the king upon the weavers was shifted by them upon their workmen, by the practice of keeping more apprentices and by paying lower wages.

[2] See Unwin, pp. 164–171.

[3] Soc. Ant. Proc. Coll. July 22, 1618.

[4] See above, page 30.

[5] Docq. August, 1635.

[6] Docq. April, May, 1640; C. R. March 18, 1640.

revenue even more than his father had been in the years from 1610 to 1620, for between 1629 and 1640 there were no Parliaments nor subsidies. The promotion of corporations was simply one of many shifty devices for raising money independent of parliamentary supplies. This purpose was in some measure attained, since the monopolies which Charles created were much better calculated to yield revenue than those that were established in the two preceding reigns. Charles did not confine himself to the practice of charging fixed annual rents, but, wherever possible, levied a small fee on each unit of sale. In the case of established industries now upon the pretext of reforming and preventing abuses brought under corporate control, a revenue proportional to output would be considerable. The companies thus constituted furnished the machinery necessary for collection, and a tolerably vigorous set of agents, at no expense to the king. Not only were the monopolies granted largely in the fiscal interest and the rents accordingly made the chief concern, but a new policy was adopted in the sale of privileges. The policy was new at least in the thoroughness with which it was carried out. Previously, some initial profit may have been occasionally and incidentally derived from the granting of privileges, but, until the period of personal government under Charles, there had been no bold and undisguised practice of putting concessions up at auction with the deliberate purpose of exacting the highest bribes that could be realized. While, however, considerably more money flowed into the Treasury from this source than formerly, it is not to be supposed that the royal receipts at all corresponded to the amounts that were paid for the privileges. The statement of one who wrote within two years of the king's death supplies a terse explanation of what actually happened: "He was held the bravest commonwealth's man that could bring in the most money, yet the king's private purse or public treasury little or nothing bettered, but to impoverish and vex the subject and to no other end: for which he was ordinarily rewarded with honor." [1] A more explicit statement [2] comes from a moderate royalist who did not attempt to conceal the faults of government under the king's personal rule:

[1] Welldon, *The Court of King Charles*, ii, p. 41, in reprint of 1811 of *Secret History of the Court of James I.*

[2] Clarendon, *History of the Rebellion*, Oxford, 1888, Bk. I, § 148.

"Projects of all kinds, many ridiculous, many scandalous, all very grievous, were set on foot; the envy and reproach of which came to the king, the profit to other men, insomuch as of £200,000 drawn from the subject by these ways in a year, scarce £1500 came to the king's use and account." The inherent weakness of the personal government could not be better illustrated than by this quotation. The government was an irresponsible one, and there was no effective check upon the dissipation of funds. The king reigned without accountability, and to do this he required the connivance of at least a few to carry out his wishes. These were in a position to draw from him, unchallenged, the larger proportion of all that arbitrary measures could collect.[1] Yet, notwithstanding his failure to control the collectors, Charles managed to gain from the monopolies far more than his predecessors had done. It is impossible to estimate what was received from the sale of charters and from the charges imposed upon units of product, but the total could have been no inconsiderable amount. At the end of the period of personal government, there is evidence as to the income from the monopolies. The alum industry had come to yield modest rents [2] instead of entailing expense as heretofore. The wine licenses brought in £30,000.[3] The tobacco licenses, expected in 1626 to be worth £1325, were producing £13,050.[4] Soap yielded £30,825, of which £29,125 came from the company in the metropolis.[5] No other monopoly paid as handsomely, but some returned very fair incomes. An annual revenue of £750 was received, for instance, from playing-cards and dice.[6] In all but name, an excise system had been established, which imposed substantial indirect taxes upon internal trade.

[1] Compare Pym's remarks in the Short Parliament: "Such illegal things are badly accounted for to the king, whereas legal things will soon be discovered if not accounted for. Besides, in monopolies and such like the third part comes not to his Majesty's coffers, as to instance in that of wines. The king hath only £30,000 per annum upon them, whereas the wines in the gains by the patent come to £230,000, and the same proportion holds in all the other monopolies; hereby it appears how much the subject is damnified and how little the king gains." *Parl. Hist.* ii, pp. 549 ff. (Clarendon evidently understated the net revenue from the monopolies.)

[2] Egerton, 2541, fol. 266; Harl. 3796, fols. 75 ff. See below, page 99.

[3] Pym's estimate of the king's revenue from the wine monopoly was confirmed by a semi-official estimate of the following year. Egerton, 2541, fol. 266.

[4] B. M. Add. 34318, fol. 40; Egerton, 2446, fol. 14; 2541, fol. 266.

[5] Egerton, 2541, fol. 266.

[6] Egerton, 2541, fol. 266.

Charles did not shirk the responsibility which he assumed in his vain attempt to govern without the assistance of Parliament. The policy of "*Thorough*" was not an empty platitude. The king himself set the example by his careful attention to the affairs of government. He was regularly present at the now very frequent and well attended meetings of the Council. In the proceedings of this body the monopolies commanded a considerable share of attention. That it was not more successful in dealing with them was due in part to the fact that it was distracted by other schemes which promised more revenue, but called for more of its labors, — notably by ship-money. It was due in part also to an old difficulty, — its dependence upon the good-will of the local authorities.[1] The latter difficulty was partially solved by the increasing resort to Star Chamber proceedings, by which the councilors could punish offenders with heavy fines which discouraged infringements, at the same time that they helped to fill the exchequer. In the reign of Elizabeth the Star Chamber had been looked upon "not as an instrument of tyranny but as the guardian of order, while even in that of James I a very large part of the business that came before it arose from suits brought by private persons," [2] though in this reign were heard complaints of abuses of Star Chamber jurisdiction.[3] Under Charles, however, the resort to this tribunal was carried to unprecedented lengths.[4] It was the purpose of gaining Star Chamber

[1] "The Lords are sorry to find that the benefit which his Majesty intended his people . . . should turn to their prejudice, which would not have happened in case magistrates and other officers of justice had been as careful in the execution of his Majesty's directions as his Majesty was to publish them." C. R. June 13, 1634.

[2] Prothero, pp. cvi, cvii.

[3] "Indeed, the world is much terrified with the Star Chamber, there being not so little an offence against any proclamation but is liable and subject to the censure of that court; and for proclamations and patents they are become so ordinary that there is no end, every day bringing forth some new project." Chamberlain to Carleton, S. P. D. July 8, 1620.

[4] Hyde wrote that the Star Chamber "extended its jurisdiction from riots, perjury, and the most notorious misdemeanors, to an asserting all proclamations and orders of state, and to the vindicating illegal commissions and grants of monopolies." Clarendon, *Hist.* Bk. III, p. 262. Pym complained in the Short Parliament: "Great courts do countenance these oppressions, as to instance in the court of Star Chamber advancing and countenancing of monopolies which should be in stead of this great council of the kingdom; and the Star Chamber is now become a court of revenue; . . . It was not usual for *meum* and *tuum* to be disputed there. The privy

jurisdiction that led to the promulgation of the large number of proclamations in support of monopolies,[1] contempt of the royal prerogative, expressed by disregard of a proclamation, furnishing a pretext for dealing with the infringer in that court.[2] The penalties there imposed were very severe,[3] and, if the political situation had made possible the unrestrained exercise of this engine of enforcement, infringment might have been effectually prevented.

The Council was constantly beset with urgent demands for the

councillors should be the lights of the realm . . . but now if these councillors should so far descend below themselves as to countenance, nay even to plot projects and monopolies, what shall we think of this? Surely it is much beneath their dignity. This is a grievance, but I must go higher. I know that the king hath a transcendent power in many cases, whereby he may by proclamation guard against sudden accidents; but that this power should be applied to countenance monopolies (the projectors being not content with their private grants without a proclamation) is without precedent." Rushworth, ii, p. 1138; *Parl. Hist.* ii, pp. 549 ff.

[1] The revival of the practice of legislation by proclamation, under the Stuarts, was based upon the specious claim of the prerogative. Such legislation had once been authorized by a statute giving the force of law to the king's proclamations, 31 Hen. VIII, c. 8, but this act was repealed by 1 Edw. VI, c. 12, § 4. Proclamations continued to be employed to amplify statutes, but the only proclamations making entirely new law, which retained parliamentary sanction, were those regulating the course of foreign trade. 26 Hen. VIII, c. 10.

A *Treatise of the Court of Star Chamber* (temp. Charles I) relates that foreign trade under Henry VII and Henry VIII was governed by regulation of Star Chamber, where summary jurisdiction gave prompt and inexpensive relief. But now the merchants are so haughty they must govern their own trade and therefore lose a great help. The Merchant Adventurers and Hansards prospered while they leaned on the strong arm of the state, but now not being able to defend themselves, have devised a means of protection, by obtaining letters patents under the great seal, reinforced by proclamation. Infringers are then informed against in Star Chamber as for breach and contempt of proclamation. (The undertakers for tin under Prince Henry, against Dunning and other Pewterers, were the first to resort to this.) But direct dependence on Star Chamber would settle and govern trade better, and free the king from "much clamor which ariseth from the multitude of grants and erecting of new companies tending to monopolies, which if the former course were observed would either never pass, or being passed upon such public examination, would take away all clamor from the king." Lincoln's Inn MSS., Coxe, xc.

[2] For cases, see Rushworth, II, ii, App. (Report of Decrees in Star Chamber, 1625–37), pp. 31, 34, 41, 69, 70, 82; and Gardiner (Camden Soc.), *Star Chamber Cases.*

[3] It was customary to remit a considerable portion of each fine, but on this account it became usual to make the fine so high that it would be large even after the reduction. In some monopoly cases, the customary mitigation of fines was not granted. See below, page 120.

recall of certain grants, most of which were definitely upheld after inquiry, although some were suspended for a time.[1] Finally, in 1639, fearing to meet the Parliament which soon had to be called with the grievance of the monopolies still unremedied, and distrusting the device that had done good service before, — the promise of allowing the patents to be put to the test of the common law, — the Council by a single act revoked a long list of patents, licenses, and commissions.[2] A few orders [3] were subsequently made, supplementing the original order of revocation. It may have been hoped that by such decisive action public attention would be diverted from some cherished patents that were purposely omitted from the orders, but these did not escape the vigilance of Pym,[4] and the Committee of Grievances placed the monopolies first on its list of abuses relating to property.[5] A dissolution soon put an end to the deliberations of this "Short Parliament" and the monopolies figured as one of the "evils and dangers" in the state in a petition for a new Parliament, presented to the king at York by a dozen peers.[6] On the third of November, 1640, the Long Parliament assembled. The principal speeches against the monopolies were made by Pym [7] and Colepepper.[8] Several members resigned or were

[1] C. R. April 14, 1631, a promise to Lady Richmond that in the investigation about farthing-tokens, her interests will be regarded. April 1, 6, 1636, iron-marking patent considered. June 24, 1636, patent for sealing bone-lace suspended. February 19, 1637, refusal to revoke patent for marking iron. February 28, 1638, patent for leaden seals for new draperies revoked. December 19, 1638, salt revocation refused. May 30, September 16, 1638, refusal to revoke the patent for lamperns.

[2] C. R. March Ult. 1639. See Appendices Q and R.

[3] C. R. April 5, 28, 1639; April 12, 1640.

[4] *Parl. Hist.* ii, p. 549, April 18, 1640.

[5] *Parl. Hist.* ii, p. 561, April 22, 1640.

[6] *Parl. Hist.* ii, p. 586.

[7] *Parl. Hist.* ii, pp. 641, 642.

[8] Rushworth, iv, p. 33, ascribes to Colepepper the following speech, and gives commentaries explaining the allusions: "These men, like the frogs of Egypt, have gotten possession of our dwellings, and we have scarce a room free from them. They sup in our cup, they dip in our dish, they sit by our fire; we find them in our dye-vat, wash-bowl, and powdering-tub; they share with the butler in his box, they have marked and sealed us from head to foot. . . . They have a vizard to hide the brand made by that good law in the last Parliament of King James; they shelter themselves under the name of a Corporation; they make bye-laws which serve their turns to squeeze us and fill their purses."

expelled [1] in pursuance of a resolution disqualifying any monopolist from sitting in the House of Commons.[2] A large number of the monopolies were "called in" by the Long Parliament, which, in cancelling them, boldly assumed a function that hitherto, with rare exceptions, had been jealously forbidden by the crown. It was distinctly an encroachment by the legislature upon executive functions, and in normal times would have been considered a most unjustifiable and dangerous innovation. But the justification lay in the very unusual circumstances of the time which prevented either the crown or Parliament from adhering very closely to constitutional precedent. With this action of the Long Parliament, the internal monopolies ceased to be a political grievance, though agitation still continued to be directed against the commercial monopolies. Some domestic privileges were not immediately revoked, and some were allowed to continue throughout the Interregnum, but they no longer possessed political interest.

[1] The practice of expelling monopolists from the House of Commons had begun in the first session of 1621. C. J. March 21, 1621.

[2] Resolved "That all projectors and monopolists whatsoever; or that have any share or have had any share, in any monopolies; or that do receive, or lately have received, any benefit from any monopoly or project; or that have procured any warrant or command for the restraint or molesting of any that have refused to conform themselves to any such proclamations or projects; are disabled by order of this House to sit here in this House; and if any man here knows any monopolist, that he shall nominate him; that any member of this House that is a monopolist or projector shall repair to Mr. Speaker that a new warrant may issue forth; or otherwise, that he shall be dealt with as with a stranger, that hath no power to sit here." *Parl. Hist.* ii, p. 651.

PART II

INDUSTRIAL HISTORY

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CHAPTER IV

THE MINERAL COMPANIES

The preceding pages of political history have had reference to the monopolies as a system; they have dealt with the origin, development, and perversion of the policy, and with the struggle to overthrow the system. In other words, the patents have been treated as a whole, and the arrangement of chapters has followed a simple chronological order designed to study the fortunes of the privileges in general, at successive periods. The object of the following pages is to trace the results of the monopoly policy in the development of industries, and here a different order of presentation is desirable. These results can better be ascertained by the topical study of a few of the more important industries than by scattering attention over the entire field. The selection of monopolies for this discussion has been guided by two considerations: first, to choose only those which were established with the avowed purpose of stimulating particular industries; and second, to take only those with respect to which it is possible to construct a fairly continuous narrative. The eight industries here considered have been chosen therefore entirely without reference to the conclusions to which their history might lead; but these chapters have been made as circumstantial as possible, in order to furnish a substantial basis for a judgment as to the economic influence of the monopolies.

The Mines Royal.

The "royal" mines constituted one of the earliest of the Elizabethan monopolies. Negotiations were commenced as early as 1561 with Steynberg, a German, and Thurland, master of the Savoy, for the purpose of opening up certain mines in England.[1]

[1] S. P. D. July 16, 1561.

Indentures were drafted but not passed until a royal commission had been appointed [1] to inquire into the mineral resources of the kingdom. Presumably after a favorable report, a patent was granted [2] on the tenth of October, 1564, to Houghstetter [3] and Thurland. The patent reserved for the first six years a tenth of the precious metals as royalty. It conferred the sole license to dig for gold, silver, copper, and quicksilver in the northern and western counties of England and in Wales, with power to purchase land and to take up workmen at reasonable wages, and the sole use of any instruments or tools not used in England within the last twenty years. Shortly after this the patentees were freed from all obligations for the payment of subsidies and fifteenths.[4] Numerous other privileges were given them, such as the use of the queen's timber for building and for fuel,[5] a commission to apprehend disorderly persons in their employ,[6] the privilege of licensing a tavern at their works,[7] and to erect houses for lodgings on the moors.[8] Meanwhile Thurland had spent so much in his search for metals that he was arrested for debt and had to appeal to the crown for relief.[9] He asked for an incorporation and permission to give shares to Pembroke, Leicester, Cecil, and Duckett.[10] Work had already begun on a copper mine in Cumberland,[11] and, to facilitate the work, the queen allowed Steynberg to borrow five hundred crowns from the Fuggers, upon the security of her agent, Sir Thomas Gresham, to be used in introducing twenty German miners into England.[12] Thurland, though deeply in debt, continued to write of the progress of the enterprise [13] until the coveted charter was obtained.[14] From the time of the incorporation there is little suggestive evidence

[1] Lansd. 5, no. 47, July 8, 1563.

[2] Pat. 6 Eliz. pt. 3; S. P. D. September, 10, 1564; Pettus, *Fodinae Regales*, p. 49.

[3] A German introduced into the enterprise. For further particulars concerning the Houghstetter family, consult Ehrenberg, *Das Zeitalter der Fugger*, Jena, 1896, i, pp. 212 ff., 234, 252, ii, 46 ff., and *Hamburg und England*, Jena, 1896, p. 4, n. 6; see also below, pages 53, 61.

[4] S. P. D. April, 1565.

[5] S. P. D. July, 1565.

[6] S. P. D. July 27, 1565.

[7] Pat. 8 Eliz. pt. 3.

[8] Pat. 8 Eliz. pt. 5.

[9] S. P. D. July 30, 1565.

[10] S. P. D. xxxvi, 95.

[11] S. P. D. September 2, 1565.

[12] S. P. D. E. Add. xiii, 32; S. P. D. September 1566 (xl, 73, 74).

[13] S. P. D. October 7, November 11, 1566, March 7, September 29, 1567.

[14] Pat. 10 Eliz. pt. 9 (May 28, 1568).

as to the work of the company until 1597, when Steynberg and Houghstetter wrote [1] to Robert Cecil from Keswick that the works were very low, and that the seasons had been wet, spoiling their peat. They prayed for indulgence, showing that they could not go on successfully till an assessment had been levied. A "stock" of £2000 should always be on hand, they said, and that they had not had.

In 1599, the Privy Council wrote to Lord Scrope,[2] directing him to investigate the condition of the work. "Great cost," they said, "had been bestowed upon the copper works of the royal mines near Keswick, far above any commodity that has come to the company by them; for their desire was that her Majesty and the realm might be served with that commodity to make ordnance, rather than stand to the courtesy of strangers who served the realm as they pleased. The managing of the works has been hitherto committed to strangers, who pretended to have dealt plainly with the company, yet are thought to have sought more their own private lucre than the benefit of the company which, nevertheless, remitted great sums of the rent due by them for their encouragement to continue the work." In the next year the accountant of the works at Keswick sent in a statement [3] of the finances of the enterprise: —

The whole cost for the past thirty-seven years had been	£104,709
Sales of silver, lead, and copper equalled	68,103
The queen's royalties amounted to	4,500
And the loss to the company and others was	27,000

A new patent was asked, and request was made that those who would not share in the contribution of £1000 needed to replenish the work might be excluded from the company. A charter, with the clause desired, was granted in the second year of James I.[4] At this time the governors of the company admitted by implication that nothing had been accomplished under the first charter.[5]

The company apparently did not even attempt to accomplish anything under its second charter. It continued to exist, and its shares had perhaps more value to the holders than they had enjoyed

[1] S. P. D. July 18, 1597.
[2] S. P. D. June, 1599, cclxxi, 40.
[3] S. P. D. December 23, 1600.
[4] See Pettus, pp. 63, 64.
[5] S. P. D. Add. February 12, 1605.

under Elizabeth, for the society now settled down into a mere privilege-monger. It still had valuable privileges which were worth maintaining, for it was vested with the monopoly of metal-mining in Wales and the north of England. Private prospectors were therefore obliged to come to terms of agreement with the company. Leases were granted by which the real adventurers undertook all the costs, and assumed responsibility in addition, for rents, to the king and to the society.[1] Thus the monopoly tended to discourage mining enterprise by levying a toll upon profits for purely private advantage. Meanwhile there was no compensating public advantage contributed by the individual members, whom the charter was designed to encourage. They seem to have been content to leave enterprise entirely to others. "There is none of that company that advances any works that I can learn," wrote Malynes in 1622.[2] The society did not even perform the service expected of it, in regulating the mining industry within its jurisdiction. The overworked Privy Council intervened to set down regulations for prospectors, and the crown arranged for leases to adventurers independently of the company.[3]

While indifferent to most undertakings, the society was ready to claim its rents from important concerns. The operations of Myddleton and of Bushell constitute the most successful achievements under its auspices.[4] Neither of them received any help from the company but paid heavy rents solely for the privilege of operating. Hugh Myddleton took a lease from the society in 1617 and paid a rent of £400 per annum in addition to royalties to the king.[5] He carried on extensive operations in Cardiganshire, where mines had been already, but unsuccessfully, worked. He cleared and drained the mines, and within a few years succeeded in producing silver in considerable quantities, which was coined at the Tower of London.[6] And in recognition of this and other services he was knighted.[7] The king also confirmed and prolonged his lease and

[1] Pettus, pp. 76–78.

[2] *Lex Mercatoria*, pt. 2, ch. 2.

[3] See calendars S. P. D. 1623–28, article "mines" in indices; R. O. Proc. Coll. Jas. I, p. 121; C. R. July 19, December 30, 1623.

[4] For other mining enterprises subject to the Company of the Mines Royal see Malynes, *Lex Mercatoria*, pt. 2, ch. 2.

[5] Pettus, p. 33. [6] Harl. 1507, no. 40. [7] Sloane, 4177.

remitted the knight's fee.[1] From 1620 to 1636 it was said [2] that the mines yielded on the average one hundred pounds of pure silver weekly, and the larger quantity of lead had of course a higher total value. Myddleton is commonly supposed to have made a large profit here, but the statement [3] that he gained £200 per month must have been an exaggeration. As late as 1623 the works were not on a remunerative basis, and the king wrote [4] to Myddleton not to be discouraged, but to continue his mining operations, "which would be rewarded in due time." The profitable period of the venture must have been between 1623 and 1631, when Myddleton died. After his death the mines "were again drowned and decayed." [5]

The restoration of the Cardigan mines and works was due to Thomas Bushell. His attention was called to the possibilities of the Welsh mines, and he sought from King Charles a commission to restore and operate them under direct crown patronage. But "his Majesty, for some reason to himself known, declined the same" and "commanded" Bushell to purchase the lease still held by Myddleton's widow. Bushell accordingly secured the lease, paying Lady Myddleton £400 in cash and £400 per annum for rent during the remainder of the term of her lease. The king granted a confirmation of the transfer, promised "any act of grace or assistance" that might be needed, and gave warrant to the attorney-general for Star Chamber proceedings against any who should hinder Bushell. At his first entrance upon the work he found it very discouraging, for the mines were flooded. But he was urged by Joseph Houghstetter and other mining experts in his employ to persist, and after working four years "night and day," and with an expenditure of £7000, he claimed to have succeeded. From his own description, it is evident that he was the first to deal successfully with the problem of deep-mining. His predecessors had only worked near the surface or on hillsides where adits could drain the mines, and their pumps had been very crude and insufficient. Bushell, however, began working at the lowest levels and cut through the main rock a hundred fathoms perpendicularly, employ-

[1] S. P. D. October 19, 1622; February 21, 1625.

[2] S. P. D. October 22, 1636.

[3] Pettus, p. 33.

[4] S. P. D. March 31, 1623.

[5] Certificate of Joseph Houghstetter et al. in Bushell's Tracts.

ing German methods, "chargeable yet certain," and hitherto unknown in Great Britain; and he drained the mines by means of the chain-pump. He was almost, if not quite, the first to succeed in reducing ores with the use of coke. His method of mixing rich ores with poor but more fusible ones in the smelting process was also a decided advance. At the expiration of Myddleton's lease the work was charged with a heavier rent. Before Myddleton's death the Privy Council had taken advantage of its increasing responsibility for the administration of the mines, and had deprived the society of its jurisdiction over the Cardigan works, and they were reserved for the direct interest of the king.[1] Therefore, when the lease fell in, Bushell had to make a new contract with the king, at an increase of £1000 in the rent, and paid beside a gratuity of a thousand marks. He also undertook to farm the customs from the export of lead. His operations as a whole appear to have been moderately successful, but they did not make him rich. Bushell was one of the most successful of the numerous men who contrived to maintain cordial relations with the successive governments in the troubled years from 1640 to 1660. To each in turn, whether out of power or in power, he "had always been" unswervingly loyal. For Charles I he equipped six thousand troops, according to his own statement made in 1664, and in other ways had contributed to the royal cause out of the profits of his mines and local mint, and the king in 1643 recognized his services over his own signature. Bushell was forced to desert his mines and take refuge in the isle of Lundy, which he held for the king. In 1646, "having obtained his Majesty's consent," he accepted the bargain offered by the Committee of Both Kingdoms, and surrendered the island to the parliamentary party on condition of being restored to his mines. In the next year the sequestration of his property was removed by a parliamentary ordinance, and he resumed his works and came into cordial relations with the popular party. He received a patent from the Protector Cromwell, February 16, 1654, which was renewed by Richard Cromwell, February 5, 1659. At the Restoration, he petitioned for indemnification for his expenses on behalf of the late king, and for his loss by the sequestration of his property for twenty years by "the usurper Cromwell" on account of his loyalty to the king. He

[1] C. R. December 30, 1623.

also sought protection from his creditors for two years, hoping in that time to recover from the works enough to repay his debts contracted on the king's behalf.[1]

An appropriate conclusion of this survey of the operations under the society of the Mines Royal is furnished by a writer of the Restoration whose statements never underestimated the prosperity of the mines: —

"By the death of the first German artisans, and the neglect of a continued stock, and the want of fuel, and the succeeding wars, all those mills and works *stand ready*, though much out of repair, for the ingenuity of the present incorporators or others."[2]

The Mineral and Battery Works.

Simultaneously with the organization of the Society of the Mines Royal, another company was formed with similar privileges in the eastern and southern counties. William Humphrey of the royal Mint associated with a German, Cornelius Shutz, who bound himself[3] in £10,000 to teach his arts to the English. They received, jointly, two patents in 1565, one for mining gold, silver, copper, and quicksilver in specified counties,[4] and the other for lapis calaminaris,[5] or calamine stone, a zinc-bearing ore which was used in conjunction with copper in the manufacture of latten. During the first year the patentees were active in their search for mines and in assaying.[6] Arrangements were also made for the erection of wire works, and these were reported ready, with a weekly capacity of 25 cwt.[7] This enterprise from the outset was more interested in manufacturing than in mining. The projectors indulged in relatively little speculation, and they did not entertain any illusions as to the immediate success of their undertaking. "Years may pass before any profit can arise," wrote Humphrey to Cecil.[8] Humphrey and Shutz, and their silent

[1] For Bushell's undertakings, consult *Just and True Remonstrance*, 1642: *The Case of Thomas Bushell*, 1649; Bushell's *Abridgment*, 1659; and supplementary notes in Bushell's Tracts. See also Dict. Nat. Biog. article "Bushell."

[2] 1670. Pettus, p. 32.

[3] S. P. D. August 16, 1565.

[4] Pat. 7 Eliz. pt. 9 (September 17, 1565).

[5] Pat. 7 Eliz. pt. 8 (September 17, 1565); see also S. P. D. xxxvii, 40–44.

[6] S. P. D. November 10, 27, 1565; June 14, 30, November 7, 1566.

[7] S. P. D. July 23, 1567.

[8] S. P. D. November 22, 1567.

partners, received a charter of incorporation [1] at the same time with the other mineral company, and shortly afterwards Humphrey took advantage of the incorporation by proposing to levy an assessment upon those who had accepted shares in the company.[2]

The chief work of the company was its wire industry at Tintern in Monmouthshire. The Tintern works were operated on successive contracts. During the incumbency of Sir Richard Martin as governor of the company, he is said to have gained £900 a year by taking the contracts himself. This was about the year 1584. Subsequently, he farmed the works to Hanbery. In 1592, the prosperity of the work was so great that Martin was able to farm it to others at £1000 a year. But the new farmers found that Hanbery, during his incumbency, had secured control of the mines of Monmouthshire which produced the only good Osmond iron used at the Tintern plant. He had also "engrossed" the woods around about and charged the new farmers exorbitantly for all their fuel; and the iron which he furnished was of inferior quality, so that "Flemish wire was now better than English." For four years, in consequence, the works yielded no profit, and although Martin had been able to farm them out, it was only at £550.[3] Shortly after this certain persons enticed away some workmen from Tintern Abbey, and with their help set up and began to operate wire works at Chilworth in Surrey. They also employed engines claimed to be an infringement of the company's privileges. A prosecution was instituted in the Exchequer against the infringers, Thomas Steere and others, in

[1] Pat. 10 Eliz. pt. 9 (May 28, 1568). The privileges of the company covered all their future inventions. A case arose concerning the lead miners of Mendip, who used a sieve and furnace claimed to have been invented under the auspices of the company. An injunction was obtained in 1574 and another in 1581. The case was tried in the Court of Exchequer, whence a commission was appointed to investigate. It was shown that the lead miners had previously used substantially the implements in question. The claims of the company were denied by the court, though a slight improvement was admitted to have been introduced. The court, however, held that it was "easier to improve than to invent." This was the first of the legal decisions upon the difficult question of improvements. The three cases cited by Fuller in the case of Monopolies were all questions of improvement, where the attitude of the law was rigidly in favor of the older workers. Lansd. 24, nos. 45, 46; 56, no. 47; Exch. Decrees and Orders, Mich. 17 Eliz.; Noy, pp. 173 ff.; Hulme, L. Q. R. April, 1896.

[2] S. P. D. July 11, 1568.

[3] Lansd. 75, nos. 87, 90; 81, nos. 5, 9 (March, June, 1596).

1603. A commission was appointed and depositions taken [1] which showed that Shutz's invention of drawing wire by water-power had been adopted by the infringers. The reply of the company to the defendants' pleadings was a long one, which furnishes a circumstantial account of the work of the society. It sets forth that before Shutz came to England all wire-drawing had been by unaided human strength, "in the Forest of Dean, in the country of Gloucester, and in the north parts." Most of the wire came from abroad, and wool-cards were imported ready finished, for wire-drawing was too expensive under the old processes. After the establishment of the works at Tintern, so much was produced that it was necessary to export to Turkey and elsewhere, and frequently £3000 worth lay unsold as long as a year. (This at least was the statement of the plaintiffs, though from it one might suspect that the quality was not good enough for the English market.) The company introduced many skilled workmen from abroad, two of whom received each £80 per annum in wages. The plaintiffs offered in argument before the commissioners that although they had enjoyed their patents for about forty years, "they have not yet received back out of the profits thereof and thereby, not one half of the money that they and their predecessors had laid out about the same works." The infringers had a great advantage over the company, because they operated nearer London and thus had less cost of carriage. But the plaintiffs contended that to remove their own works in order to compete on equal terms it would be necessary for them to join in the destruction of woods near London, and at the same time throw out of employment "many thousands" of handicraftsmen in Wales, Somerset, Wilts, Devon, and Cornwall, and in the cities and towns of Bristol, Salisbury, Exeter, Bath, Gloucester, and Worcester, who were engaged in drawing and working up the wire made at the works. Judgment was given against Steere, but the court adopted the rough-and-ready justice of requiring the victorious plaintiffs to buy up the stock and tools of the defendants and to take Steere into their employment at reasonable wages.[2]

A few years before the settlement of this suit Parliament and the crown joined in a new policy of bolstering up the industry. The

[1] Exch. Dep. by Com. (Hil.) 2 Jac. I, no. 12.

[2] Exch. K. R., Mem. R., Trin. 4 Jac. I, 61.

reverses of the enterprise, resulting from trouble at the works and the competition which had to be met, had brought a demand for protection of the wire-drawing industry and its "many thousands of poor" employees. The governors of the company added that the wire which they produced was better than that made abroad, and that English wire was consequently exported to France and returned to England in the form of card-wire.[1] It will be recalled that for another purpose the company argued that it should be supported against Hanbery, because foreign wire was better than the English.[2] But Parliament was easily convinced by a mercantilist argument, and in 1597 an act was passed prohibiting the importation of wool-cards,[3] the principal product manufactured from Tintern wire. The ostensible reason for the prohibition was that "false and deceitful" wares were introduced by the Dutch and Germans. Mercantilist argument, however, was resourceful. A quarter of a century later, protection was asked for wire as well wool-cards. The act of 39 Eliz. "has lately been evaded" by the manufacture, within the realm, of cards made of imported wire![4] The petition was referred to the Privy Council and by that body to specially appointed referees.[5] The result was a proclamation forbidding the importation of iron wire, for "English wire is made of the toughest and best Osmond iron, — a native commodity," — and is better than foreign wire, especially for wool-cards.[6] Until shortly before the resort to protection, the wire works had enjoyed a moderate measure of prosperity. The gains had been steady, even though small, both in revenue and in markets, and an industry had been established which was strong enough to survive the inertia and mismanagement of the early part of the succeeding century and the disorders of the civil war. It may therefore be reasoned that by the display of some energy the enterprise might have held its own in the face of foreign competition. But protection was an easier remedy and was accepted as a convenient substitute for enterprise, and thereafter no material progress was made. The explanation which was given by an interested party for the stagnation of the industry was that the protection was not thorough enough. "By reason of the acts

[1] Lansd. 52, no. 22.
[2] See above, page 56.
[3] 39 Eliz. c. 14.
[4] S. P. D. September 4, 1629.
[5] S. P. D. April 2, 1630.
[6] R. O. Proc. Coll. 6 Car. I. no. 123.

of Parliament made against importing foreign wire are something imperfect, and for other reasons," the works "afford little: to which also the society will doubtless have more regard, because it concerneth somewhat the good or ill of the clothing manufacture, by the exportation of our wire, and the importation of foreign wire." [1]

The patent for calamine stone lay unused for nearly twenty years. Some foreign workmen were introduced to start the industry, but they accomplished nothing, and the Battery Company soon devoted its entire attention to the iron wire works. But in 1582 there was an opportunity to license the latten wire manufacture. John Brode of St. Giles-without-Cripplegate contracted to pay £50 per annum during fourteen years for the privilege of setting up this industry. At Isleworth in Middlesex he also spent £3500 in order to "bring it to perfection." After eight years of experimenting he succeeded in "establishing" the industry, manned with English workmen. He claims to have been the first to make English latten strong enough to withstand water-driven hammers. He also bought up all the available deposits of zinc-bearing ore or calamine stone. The company claimed that he did not maintain his rents, and that he kept his process secret. When his lease fell in, in 1596, the company farmed the works at £400 to others. It was at once complained that Brode was hindering the new farmers in their purchase of calamine, and an order was obtained from the Privy Council commanding Brode to furnish calamine for the work at reasonable prices. Ten years later he was still seeking payment for the materials thus supplied and for redress for his losses.[2] Such real progress as was subsequently made in this industry seems to have been illicit. A London Pewterer, who in some way, probably on account of the inertia of the company, contrived to evade its monopoly for twelve years, invested heavily in a plant for manufacturing latten wire, and introduced many foreign workmen. He sold his product for £6 per cwt., but when Lyndsey farmed this industry from the company, he proposed to sell the same product for £8 or £10.[3] Lyndsey's hope of success involved the fortunes of the Pinners. He engineered

[1] Pettus, pp. 32 ff.

[2] Lansd. 81 nos. 1–4; Hist. MSS. Com. Rept. iv, 117, House of Lords supplementary calendar, 1605.

[3] S. P. D. May 24, 1639.

their project for a monopoly in his own interest. As a result of his efforts, the Pinners Company of London was granted a monopoly of the English market for pins [1] on condition that they would make their pins of wire furnished from his works, although foreign wire was better suited to the manufacture of pins.[2] The arrangements under this contract were never carried out, for the Long Parliament, which met in the following autumn, made it impossible to pursue the plans agreed upon. In 1665 the copper used in England was entirely imported, the English being still dependent upon the Dutch and Swedes for their supplies of copper and most of their brass, while Welsh zinc was exported in the ore.[3] A contemporary petition of the brass manufacturers shows that the Swedes undersold the English who attempted to revive the latten works, and, after they had command of the market once more, raised the price. A countervailing duty, the petitioners claimed, would cause *plenty of rough copper to be brought in.*[4]

In judging the merits of the two mining monopolies, full credit may be given to the worthy motives that originally inspired them. Their creation was due to the feeling on the part of the crown and the ministers that it was economically and strategically important to develop the mineral resources [5] of the kingdom. They knew that to do this it was necessary to offer adequate inducements to foreign master-workmen to bring into the country the metallurgical arts of the continent. They took the obvious means of encouragement, and, so far as the mere introduction of industries was concerned, they accomplished their purpose. That the means they adopted were perhaps not the most suitable, that at any rate the privileges granted were too extensive, was an error due to lack of experience. It must be remembered that these two concessions were the first important patents of monopoly. Many lessons were

[1] C. R. March 18, 1640.

[2] "It was necessary to harmonize these two jarring monopolies by subordinating them both to a higher conception of mercantile policy. The possibility of maintaining a steady market for unsatisfactory English wire was dependent on the possibility of maintaining a regular demand for unsatisfactory English pins." Unwin, p. 168.

[3] Dudley, *Metallum Martis* (p. viii of the epistle to Parliament), 1665.

[4] The petition is reprinted in Stringer's *Opera*, p. 157.

[5] See Cunningham, ii. pp. 53–63, in 3d ed.

learned from these concessions, and subsequent grants were naturally made with more precision. In a review of the results of these two monopolies, it is evident that their object was accomplished in some degree, for the industries thus introduced were permanently established within the country. Particular kinds of technical skill were transmitted from the alien workmen to the English, who at least kept the spark alive until a more favorable time. They formed the nucleus, indeed, of the work-masters who revived the metallic industries of a later date. They had acquired sufficient familiarity with such work to qualify them for introducing further improvements. But, having stated this much to the credit of the monopolies, some qualifications are necessary. Admitting that metallurgical arts were naturalized by means of the monopolies, it must be stated that the fact had little importance at the time, nor, indeed, till long afterwards. The chief mineral resources of the realm, tin, lead, and coal, were unaffected by the societies. Copper and zinc were the metals which chiefly concerned the societies, but in the production of these they contributed little and exacted much. The form of the privileges was most unfortunate. Such rigid monopolies went far toward defeating their own end. That they were broader than was necessary to tempt the foreigners to introduce their arts, or to encourage natives to finance them, is demonstrated by the fact that neither of these companies availed themselves of all their rights, but reserved many only for special exigencies, to save themselves from troublesome competition. Privileges directly proportional to actual undertakings would probably have been as tempting as perpetual grants covering all mines in the country, for Shutz was content to develop his wire-work, and Houghstetter, according to tradition,[1] soon dropped his active connection with his company and retired into Wales, where he founded a family. On the other hand, the grant of monopolies in the hands of two companies which did not exercise them tended to discourage enterprise and adventure outside the companies. The societies had most to gain by confining their attention to a few concerns which enjoyed a close market. Outside the monopolies it was discouraging to operate, for the companies were ready to suppress or levy tribute upon any undertaking which proved successful.

[1] And cf. above, page 53.

CHAPTER V

THE MECHANICAL INVENTIONS

The ordinary sources of information as to the results of the sixteenth and seventeenth monopolies are almost silent as to the many privileges that were granted for mechanical inventions. The fact is that no single one of the inventions of this character proved of firstrate importance. In the aggregate, they represent a fair state of mechanical activity, some ingenuity, and considerable teachableness. They indicate that Englishmen were alive to the value of technical improvements, and that they were introducing them from all sources — domestic and foreign. The whole period was one of great industrial expansion, and it was this condition rather than a system of governmental encouragement that caused the unusual exercise of mechanical ingenuity. In the mechanical progress that took place the patents were not leading factors. Some of the most successful mechanical innovations of the period did not enjoy any patent. The patent system could not create ingenuity, which is dependent upon far deeper influences than are at the command of government. The influence of the patents was at best indirect.

The mechanical inventions which were of the greatest importance were for draining and water-raising. The influence back of the various pumping and draining devices was the mining activity in the various parts of the country. The operations of the two mining companies, and of the lessees under them, have already been noted. Several mining interests which antedated 1560 were beyond their control. In all these the problem of deep mining was becoming an important one. At the beginning of the seventeenth century it was believed that the Newcastle coal supply was nearly exhausted,[1] for by that time the surface deposits had been pretty well worked. During Elizabeth's reign, deep-shaft lead mining was tried without success, although considerable sums of money had been staked

[1] Proceedings Arch. Inst. Newcastle, 1852, p. 186.

upon the venture under Bevis Bulmer, one of the most resourceful engineers of that reign.[1] In iron mining an attempt at draining was made in 1573,[2] but nothing is known of the results. In tin mining there is positive information of attempts at deep shafts and drainage,[3] and there may have been some slight relation between these attempts and the increase in production about the middle of the seventeenth century. About one fifth of the inventions that were patented between the years 1620 and 1640 were for various water-raising and draining devices, showing not only the relative importance of the problem of improved drainage at this time, but also the great activity in attempts to meet the growing economic need.[4]

It is noteworthy that the accounts of mining enterprise, as well as the patent rolls, point unmistakably to the conclusion that the improved appliances in mining were introduced by Germans. The engines commonly used for water-raising in the coal mines of England in the seventeenth century were those which were known on the continent in the sixteenth century.[5] The two mining corporations owed their charters to the introduction of Germans and the most important mining operations that were ever conducted under their leases were carried out by Bushell, who stated that his success was due to German methods.[6] The patents for drainage themselves confirm the evidence from the mines, by the German names of many of the patentees, as well as the frequent direct statement as to the place of origin of the "invention." Among other such patentees in the sixteenth century were Burchsard Cranick, Daniel Houghstetter, John Synnerton, and Peter Morris, all of them either German or Dutch, who patented inventions for water-raising and drainage.[7] It is less easy to discover the chief agents of activities

[1] Bushell's *Abridgment.*

[2] Pat. 15 Eliz. pt. 5 (October 28, 1573).

[3] Patents, December 31, 1562, June 22, 1563.

[4] Specifications of Letters Patent for Invention, 1617, nos. 3, 19, 21, 29, 34, 37, 42, 48, 49, 50, 57, 66, 67, 76, 84, 105, 110, 114, 117, 125. These patents were issued at quite regular intervals, usually one a year.

[5] Galloway, *Annals of Coal Mining and Coal Trade*, 1898, pp. 152, 153, 157. Compare Agricola, *De re Metallica*, 1559.

[6] See above, pages 53, 54.

[7] See Hulme, L. Q. R. April, 1896, January, 1900.

of this sort in the seventeenth century, because the preference for conferring privileges upon natives led to the practice of petitioning for grants in the name of an Englishman. But as England looked to Germany, High and Low, for all her technical progress, it is to be inferred that a majority of the patents were of continental origin.[1] It is probable, therefore, that there was little native mechanical genius in England. There were, to be sure, professional men of genius, but though men like David Ramsey and the Marquis of Worcester [2] invented new things by the score and by the hundred, they cannot be considered industrial leaders. The latter, indeed, probably invented little in the modern sense of the term "inventions." In that period it is a significant fact that the popular and even the legal meaning of the word "inventor" covered not only the originating but also the importing of technical ideas and processes.[3] Indeed, imitation of the foreigner was a much more important factor than "native wit." The latter long found its chief scope in adapting foreign devices to domestic conditions. But this eager, imitative apprenticeship bore its fruit in the following century when English mechanical skill, joined with scientific genius, furnished the tools for the Industrial Revolution.

In passing judgment upon this group of patents the motives are easily disposed of. None of the patents were more free from any suspicion of selfish interest on the part of the crown. The rents or fees were merely nominal, and it is clear that it was the intention to grant them to the persons justly entitled to them. There is some reason to suspect that in the Stuart days this intention was occasionally defeated by rogues near the throne, who, hearing of a project, contrived to secure a privilege for themselves,[4] perhaps with the purpose of extorting bribes from the only persons to whom such a privilege could have a working value. In other cases, however, patents were quite legitimately granted to natives for aliens in order to meet popular objections. These grants corresponded in motive and character to the industrial patents of our own day,

[1] This indebtedness was remembered as late as the eighteenth century, when, for instance, the ribbon loom was still called a "Dutch loom."

[2] Consult Specifications, and also *A Century of Inventions* by the Marquis of Worcester, 1663.

[3] See above, p. 24, and Appendix H.

[4] See, e. g., S. P. D. July 1610, lvi, 47, 48.

and if any exclusive privileges were justifiable on the ground of social utility, these probably were. They deprived no person of any rightful occupation; they surely did not confer rewards disproportionate to the value of the inventions. Whether the public gained or suffered by them is, of course, a question which depends entirely upon the results. The paucity of evidence respecting them is a reasonable warrant for concluding that there were at least no grave public abuses in their exploitation. But there were certain temporary circumstances which rendered their social results more questionable than is the case to-day. Contrary to what might on first thought be supposed, the conditions of the sixteenth and seventeenth centuries were in some respects less suitable for a patent system than are modern conditions. For every advantage by way of encouragement that a special privilege gives, there are certain disadvantages to those excluded by the patent. A patent system is justified only when the advantages outweigh the disadvantages. With industry highly specialized this may easily happen. An inventor of machines may set himself to supplying his product to all who will take it of him. Hence none who will buy need go without. But this is far from the situation of the seventeenth century. Markets were not wide enough to permit an inventor to devote his whole attention to the production of a machine of a certain pattern. Indeed, we hear of no workshops in England where machines were made for sale.[1] An engineer or producer contrived or adapted a particular machine for a particular need. If he secured a patent, his rivals were likely to go without, unless they infringed his grant, since he could not afford to be drawn aside from his main work to produce for his rivals. An attempt was made to obviate the difficulty by conferring the sole right to license others to use an invention. But a successful inventor had no desire to license his rivals, and he did not need to, for there was no genuine specification published. He could therefore still keep his invention secret. Thus the patent had only the advantage of safeguarding the inventor to some extent against the danger that his invention might be discovered. Indeed, as might have been expected under the circumstances, the most successful mechanical appliances, with a few exceptions, were not patented at all. The patents that were taken

[1] But cf. above, page 4, note 2.

out were for inventions of minor or doubtful value. The important mechanical inventors were not without government aid, but they took it in a more comprehensive form than a mere grant for an appliance. Their work, therefore, did not depend upon the encouragement of the patents for invention. Mechanical skill was directed largely toward mining, water supply, and drainage, and in all three of these directions the incentive was the concession of substantial privileges of exploitation, rather than the mere protection of technical processes.

CHAPTER VI

THE GLASS PATENTS

A POOR form of window glass seems to have been made in England in the fifteenth century, and was said to have been in use by the common people. Green bottle glass was also made in the region of the Sussex iron works where silica and potash were easily obtainable.[1] In the early part of the sixteenth century there were numerous glass makers in England, some of them natives and some from the Low Countries and Venice.[2] Their product was in the main of a very coarse variety.[3] The finer forms of drinking and crystal glass, as well as most other glass wares, were imported as expensive luxuries by the glaziers.[4] In 1567 a patent was granted to Carré and Becku (alias Dolyn), who had come into England as a result of the Low Country disorders and had erected three glass works, promising to introduce the Lorraine art.[5] But the patentees were merchants rather than master workmen, and depended upon one Briet, who within a year quarrelled with Dolyn and withdrew across the Channel with the workmen.[6] Dolyn then tried to use the services of native workmen, but in vain,[7] and he appears thereafter to have done nothing more than to attempt to levy toll upon the output of new adventurers.[8] The industry, however, did not appear to be dependent upon royal protection, and an application which the patentees made in 1576 for a renewal of their privileges [9] met with no response, for in the meanwhile others had set up works of the same sort, which were important enough to make their depredations upon the forests noticeable. In 1589 there were said to be fifteen glass works in England, and seven years earlier their numbers were

[1] Hulme, Antiquary, November, 1894.
[2] Page, *Denizations*, introd. pp. xlv, xlvi.
[3] S. P. D. August 9, 1567.
[4] Lansd. 48, no. 78.
[5] Pat. 9 Eliz. pt. 11 (September 8, 1567).
[6] Lansd. 59, no. 76.
[7] Hist. MSS. Com. Rept. vii, p. 621 (Loseley MSS.).
[8] Lansd. 59, no. 72.
[9] Lansd. 22, no. 7.

large enough to cause the lord treasurer to make an effort to collect "rents" of them to replace the customs lost.[1] In 1585 an effort was made to secure the enactment of a statute regulating the employment of aliens and checking the destruction of timber by glass works.[2] We are told that during Elizabeth's reign eleven glass-houses were "put down" at Chiddingfold on the Sussex side or Sussex-Surrey border. The authority[3] for this is not the most reliable, but at all events many glass makers were moving westward in the last decade of the reign, obviously in search of new fuel supplies.[4] Among the early workmen, unprotected and unaided by royal favor, were Delakay and Orlandini of Venice,[5] who did not continue long in the industry; George Longe,[6] who petitioned for a monopoly in 1589; some French workmen in Sussex,[7] employed after the massacre of St. Bartholomew by the father of Evelyn, the diarist; and an unnamed Italian who worked at Guildford.[8] Glass was also made in several places in Kent after 1572.[9] The most important names, however, are those of the families of Henzey and Tyzack, who were related to the great 'gentilshommes verriers' of Lorraine;[10] and the Bungars, who had similar connections with the glass makers of Normandy.[11] They were probably Huguenots who, for religious reasons, severed their continental relations about 1570. They brought with them the skill of their respective families, and became and continued until the nineteenth century the most accomplished English workers in glass. They were involved with the patentees of 1567; but the patent seems to have been a hin-

[1] Lansd. 59, nos. 72 and 75.

[2] Hist. MSS. Com. Rept. iii, p. 5; Lansd. 59, no. 75.

[3] Aubrey, *Nat. Hist. and Ant. of Surrey*, iv, p. 36.

[4] Hallen, Scottish Antiquary, April, 1893, p. 151 (Early English Glass-makers).

[5] Hist. MSS. Com. Rept. xiii, pt. 4, p. 62.

[6] Lansd. 59, no. 72.

[7] Hartshorne, *Old English Glasses*, p. 169, quoting Evelyn, without indicating the reference of volume and page.

[8] Kempe, Loseley MSS., app. p. 493.

[9] Antiquary, April, 1905, p. 127.

[10] Beaupré: *Les gentilshommes verriers dans l'ancienne Lorraine*, 2e ed. Nancy, 1846.

[11] Le Vaillant de la Fieffe, *Les verreries de le Normandie, les gentilshommes et artistes verriers Normands*, Rouen, 1873; Hallen, Scottish Antiquary, April, 1893, pp. 146 ff.

drance rather than a help to them, and their work prospered without exclusive privilege as soon as the quarrels of the patentees set them free, with other glass makers, to pursue their own ends. They sought privileges but did not receive them, and though the industry remained for a time open to all, these families soon became the chief producers in England, and their works were scattered over many parts of the country.[1] In the next reign the Bungars held aloof altogether from the patentees, and were their most active rivals. The Henzeys and Tyzacks also competed to a certain extent, but in general pursued a more conciliatory policy and accepted positions under the patentees, though not very cheerfully. Whatever success the patentees enjoyed in the early Stuart period was due to them.

Meanwhile an effort was being made to develop the manufacture of drinking glasses, and a patent was granted to an Italian, Giacopo Verselini, for the sole manufacture for twenty-one years, and with a prohibition of importation from abroad. It was declared that all might buy freely of him in gross or at retail.[2] The glass-sellers naturally opposed the patent,[3] but without avail. Such complete powers would seem to have been all that should have been necessary for a successful undertaking. But perhaps only the most complete command of the market would have been a sufficient inducement to establish in England such an advanced form of the industry. The enterprise at all events had many difficulties. Within a year of the patent the Crutched Friars glass house, where the undertaking was located, was burned to the ground.[4] It was rebuilt however, before 1589,[5] and probably before 1581, as in the latter year the Privy Council was involved in an unfortunate attempt to deal arbitrarily with Orlandini, who with a new partner [6] was infringing Verselini's patent.[7] Infringement seems to have been a serious difficulty in this enterprise, probably because the makers of other kinds of glass were tempted to carry on this branch of the industry as an incident to their main work. During Verselini's connection with the undertaking little is heard of it except the infringements.

[1] Lansd. 59, no. 76; 59, no. 72; 22, nos. 6, 7, 8; Hist. MSS. Com. Rept. vii, p. 621 (Molyneux MSS. August 1569); Hartshorne, p. 170; Hallen, op. cit.; and Hulme, Antiquary, December, 1894, p. 262.

[2] Pat. 17 Eliz. pt. 13 (December 15, 1574).

[3] Lansd. 48, no. 78.

[4] Stow, *Annals*, p. 680, Howes's ed. 1631.

[5] Lansd. 59, no. 77.

[6] See above, page 68.

[7] C. R. February 19; May, 28, 1581.

The grant for twenty-one years had expired before any great work had been accomplished.[1] In the mean time a grant in reversion had been issued to Sir Jerome Bowes, covering the identical privileges which Verselini had enjoyed, and with more stringent regulations against infringement.[2] The only economic justification for this second patent would have been that the first had not been successful. But this was too weak an argument, and the real reason was frankly stated. It was given in consideration of Sir Jerome Bowes's personal services to the crown, and of a rent of a hundred marks per annum. The grant was renewed at its expiration,[3] and in the next year the reversion was granted to Hart and Forcett [4] for twenty-one years, to begin three years after Bowes's death. Edward Salter received a patent for certain glasses not included in any of these patents.[5] The renewal of Bowes's patent was made at a time when the industry was no more prosperous than when he received it in the first instance.[6] At the time of the renewal, large arrears of rent were due to the crown.[7] It was not long after this that a new project was set on foot, which not only caused the revocation of this patent, but also practically absorbed all branches of the glass industry in England.

The glass industry, like the iron industry, encountered difficulty in procuring cheap fuel. Glass making had, however, an advantage in one respect, for its plants were not expensive and could readily be abandoned and new ones built whenever the wood of the neighborhood was exhausted.[8] But this destruction of the forests aroused great popular opposition.[9] Hence the French glass making families had been impelled westward, first to the Forest of Dean, and then to Staffordshire and Worcestershire,[10] where there was more abun-

[1] See S. P. D. April 16, 1624.

[2] Pat. 34 Eliz. pt. 15 (February 1, 1592).

[3] Pat. 4 Jac. I, pt. 15 (October 5, 1606).

[4] Pat. 5 Jac. I, pt. 24 (October 8, 1607).

[5] Pat. 6 Jac. I, pt. 1 (February 15, 1609).

[6] S. P. D. April 16, 1624.

[7] S. P. D. September 8, 1605.

[8] Lansd. 59, no. 72.

[9] See for example, Hist. MSS. Com. Rept. xiii, pt. iv, pp. 75, 76.

[10] Hallen, Scottish Antiquary, 1893, p. 151; Grazebrook doubts whether there were any glass works near Stourbridge before the proclamation of 1615. *The noble Families of Henzey, Tyzack, etc.* 1877, p. 10. But he himself cites the name of a Tyzack from the parish register of Kingswinford, not far from Stourbridge, of the date April, 1613 (p. 12). See also note 2 on next page, and page 72, below.

dant timber. But the supply of wood even in Worcestershire was becoming exhausted [1] and the presence there of surface deposits of coal stimulated experiments with this fuel.[2] The glass makers left behind in Surrey and Sussex adopted the use of coal not long afterward.[3] The first patent,[4] however, was secured by a court attendant, Sir William Slingsby, carver-to-the-queen. Slingsby was neither an inventor nor a glass maker. He appropriated a design introduced from Hungary and Germany by "a poor man" whom he defrauded of his right.[5] Slingsby admitted that the Frenchmen had been the first in the field, but based his claim upon their incomplete success.[6] His own success, however, was no greater, and his rights were set aside, despite his protest,[7] in favor of a new project.[8] A patent [9] was issued to Zouch, Thelwall, Percival, and Mefflyn, giving an exclusive privilege for the use of sea-coal in the manufacture of glass. Though Slingsby's patent was set aside, the rights of the patentees of 1606–09 were for the time being reserved, and they were protected from infringement as before.[10] But the several patentees at once came into conflict with each other, and the Privy Council was called upon to settle the disputes.[11] The outcome of all the proceedings was that a new and exclusive patent was granted to Sir Edward Zouch and his partners [12] setting aside completely the rights of Bowes and Salter under their respective patents; but as a recompense for their losses the £1000 rent reserved was assigned in pensions [13] to the old patentees. The quality of Zouch's glass may be surmised from a

[1] Dud Dudley, who entered upon the management of iron works at Stourbridge, in 1619, said that the industry was decaying there for want of wood, "though formerly a mighty woodland country." *Metallum Martis*, p. 62, in ed. of 1858.

[2] A petition to Parliament in 1624 calls upon Lord Dudley to witness the fact that glass was first made with coal on his estate, Stourbridge, Worcester. (S. P. D. April 16, 1624.) Dud Dudley confirmed this statement. *Metallum Martis*, p. 70.

[3] See Sturtevant, *Metallica*, Appendix S, below.

[4] Pat. 8 Jac. I, pt. 12 (July 28, 1610).

[5] S. P. D. July 27, 28, 1610.

[6] Harl. 7009, no. 4, fol. 9.

[7] S. P. D. February 26, 1611.

[8] Lansd. 266, fol. 110.

[9] Pat. 9 Jac. I, pt. 29 (March 25, 1611).

[10] C. R. May 12, 30, July 18, 1613.

[11] C. R. July 29, August 6, 31, October 31, November 14, 1613. S. P. D. November 17, 1613. See also Gardiner, iv, p. 9.

[12] Pat. 11 Jac. I, pt. 16 (March 4, 1614).

[13] C. R. July 11, December 12, 1614; Sign Manual (v, no. 85), March 17, 1616.

certificate which is ambiguous only in its formal wording. The glass is pronounced good and clear, but uneven and full of spots.[1] Neither the farmers under Bowes's patent nor the independent glass makers yielded gracefully to Zouch's monopoly. Several makers of drinking and crystal glasses were imprisoned for their obstinacy,[2] and the French broad-glass makers persisted in using coal. The Privy Council issued warrants to messengers of the Chamber for the apprehension of Paul Tyzack [3] who had several plants in Staffordshire and Worcestershire, and for the arrest of four of the Henzeys and two of the Tyzacks in Sussex.[4] For the relief of the latter it was ordered that the patentees should buy up their materials and equipment at reasonable prices, provided the Sussex glass makers would give up their skilled workmen for the benefit of the patentees.[5] The new patentees were anxious still further to strengthen their position, and to this end they admitted into partnership two powerful courtiers, the Earl of Montgomery and Sir Robert Mansell. A new patent recognized the arrangement.[6] Henceforth the patent was under the guidance of Mansell, whose name was most intimately associated with it, and who in fact eventually acquired the entire interest.[7] Before Mansell joined the undertaking, it had already acquired control, as far as the government was able to enforce its orders, over the most promising part of the industry, for the most efficient and economical plants were already worked with coal, since glass smelting did not present the same obstacles as iron smelting. There yet remained two steps to be taken before the patentees could enjoy complete control over the industry. The manufacture of glass with wood for fuel was a traditional industry owing nothing to any patent, or at least nothing to any patent then unexpired. This part of the industry was destined to decline, but its existence side by side with the monopoly would be an embarrassment. For a long time to come, it might remain an active competitor with the new method, and might even have the advantage in case the monopoly were not well managed.

[1] Kempe, Loseley MSS. p. 493.
[2] C. R. September 6, 30, 1614; January 13, 1615.
[3] C. R. November 18, 1614.
[4] C. R. November 30, 1614.
[5] C. R. December 21, 1614.
[6] Pat. 12 Jac. I, pt. 3 (January 19, 1615).
[7] See S. P. D. December 10, 1618.

And beside the disadvantage of having to compete both in quality and in price, there would be the constant danger that the old glass makers would secretly use the new method, and the equally great inconvenience that the monopoly might be too closely watched to allow it quietly to use the old method. Yet to grant an exclusive monopoly over the whole industry would be too clear a violation of law, for it would contravene the decision in the Case of Monopolies in the most open and direct way. There was also danger from foreign competition. But the government was ready with an expedient. A proclamation was issued which prohibited the use of wood in the melting of glass, on the ground that it was necessary to protect the forests. Importation was forbidden at the same time.[1]

As only the patentees were entitled to use coal, this proclamation of 1615 marks the final step in the realization of a complete monopoly in the glass industry. The patentees were granted all glass forfeited by virtue of the proclamation.[2] Henceforth the glass monopoly engaged nearly half the attention which the Privy Council devoted to the patents. Steps were immediately taken to prevent the monopoly from losing any of the advantage which it had now acquired. Orders were issued for the apprehension of certain glass workers who were suspected of a design to retire from the country.[3] Among the number was a certain Joshua Henzey, described as a "servant" of Sir Robert Mansell.[4] Warrants were issued[5] for the suppression of glass houses in the interest of Mansell. A letter was sent to the chancellor and barons of the Exchequer, directing them to call offenders before them and punish them summarily.[6] Open warrants of assistance were intrusted to Mansell.[7] Those infringing the patent or the proclamation were summoned before the Council, their goods seized, and bonds required of them.[8] Complaints against Mansell began at once to come in,

[1] R. O. Proc. Coll. May 23, 1615. S. P. D. clxxxvii, no. 42.

[2] Grant Bk. p. 165.

[3] C. R. January–December, 1615, ii, 8, 115, 126. See also C. R. April 2, 1630.

[4] C. R. March 17, 1616.

[5] C. R. April 7, 1616.

[6] C. R. ii, 57, 58 (1618).

[7] C. R. December 30, 1617.

[8] C. R. 1618–25, iii, 354; iv, 57, 58, 260, 305, 334, 335, 354, 356, 448, 450, 455, 461, 674; v, 86, 87, 96, 97, 100, 104, 144, 196, 226, 229, 480, 602, 628, 636, 704; vi, 15, 16, 40, 41, 67, 68, 99, 402, 403.

and they accumulated rapidly. The glass, it was said, was now poor, undersized, scarce, and expensive. And it was certified that wood was being consumed in Mansell's works.[1]

This patent was called in question in the Parliaments of 1614, 1621, and 1624.[2] In a statement prepared in defence of his patent during the debate upon the monopoly bill, Mansell recounted his struggles and previous failures to establish the industry. After unsuccessful ventures in London,[3] the Isle of Purbeck, Milford Haven, and on the Trent, he claimed that he had at last succeeded at Newcastle,[4] where he was "saving fuel," "increasing shipping," keeping 4000 (!) men employed and making cheap glass.[5] In a counter petition all these representations were severally denied by the independent glass makers, who treated the whole question soberly and soundly. They showed that since Verselini's patent in 1574 there had been a continuous succession of monopolies in glass, and that during this period of fifty years the patentees had as far as possible excluded all others from the trade, but had done little or nothing to advance the art themselves, and that very few if any natives had been instructed in it, although this was supposed to be the chief motive of the grant. The glass industry, instead of being advanced, had been retarded, because many glass makers who could not get satisfactory employment under the patentees had passed beyond seas to seek a livelihood, carrying English skill to foreign countries.[6] Mansell, they pointed out, had raised prices, though

[1] C. R. April 23, 1617; S. P. D. March, 1620 (cxiii, 47–53); C. J. May 16, 1621; Proc. and Debates, 1620–21, April 30, 1621 (ii, 360-363). The patentees, on their part, secured a single and somewhat suspicious testimonial. S. P. D. April 15, 1621.

[2] C. J. April 20, May 6, 1614; May 16, 1621; April 19, May 1, 1624.

[3] Howell, who was employed by Mansell as his foreign agent for the works at Winchester House, from 1618 to 1621, wrote that "Sir Robert Mansell . . . hath melted vast sums of money in the glass business, — a business more fit for a merchant than a courtier . . . My father fears that this glass employment will be too brittle a foundation for me to build a fortune upon . . . and hath advised me to hearken after some other condition." Ho-Elianae, p. 103 in ed. of 1890.

[4] Hallen, Scottish Antiquary, April, 1893, notes from the parish register of All Saints, Newcastle, February 11, 1618: "Edward Henzey, servant to Sir Robert Mansell," which approximately fixes the date of the beginning of the Newcastle work. After this date, the names of Henzey, Tyzack, and Tittory are frequently found there.

[5] S. P. D. April ? 1624 (clxii, 63).

[6] This is confirmed by continental evidence. See H. Schuermans, *Verreries à la Venetienne*. Let. ii, p. 371 (quoted by Hartshorne, p. 38).

the cost of production had not increased. They showed that the shipping maintained by Mansell was insignificant. Their answer with regard to the saving of fuel, which was Mansell's strong argument, is interesting, for it followed a line of reasoning that was rare in its day. After explaining that the glass furnaces had not been accustomed to employ heavy timber, but only light limbs and branches of trees, they contended that the danger of demolishing forests could not really be a serious one, because it had been found in experience that the profits in the glass industry were too low to admit of a successful prosecution of any undertaking when the expense of fuel was high; and they insisted that the price of fuel would everywhere reach this prohibitive point long before the forests were jeopardized. They represented that it was, in fact, economic necessity which compelled them to take up the use of coal as fuel, and that they had resorted successfully to this method of preparation before any patent was granted for the use of coal, and before the proclamation forbidding the use of wood. They corrected a statement made by Mansell to the effect that Bungar had made a competitive bid for a patent. What Bungar and others had offered to do was to pay the king a rent of £1000, for permission to themselves and to all others to manufacture without restraint, and to sell at two shillings per pound less than Mansell's prices.[1]

The agitation in the previous Parliament, 1621, had had an unexpected effect. Mansell was at the time abroad in the naval service, and this was made an excuse for insisting upon a suspension of the proceedings against his patent.[2] Mansell forwarded a petition relative to his patent, which was referred to a committee, which reported that as Mansell was "a faithful servant of the king"[3] his patent should be upheld notwithstanding that it was complained

[1] S. P. D. April 16, 1624.

[2] S. P. D. and C. R. June 18, 1621.

[3] "Mansell, who was an indifferent seaman and an incapable and dishonest administrator, and whose only claim to the place was his favor with Nottingham, remained in office till 1618, and the greater portion of this paper is practically a record of his unfitness for his important charge." — Oppenheim, *Royal Navy under James I*, English Historical Review, July 1892, p. 416. The office referred to was that of treasurer of the royal navy. In 1618 Mansell sold this office and succeeded to that of vice-admiral. See Dict. Nat. Biog.

of as a grievance in Parliament. At the suggestion of the referees the Privy Council recommended a new patent for Mansell, giving him a monopoly of manufacture for a term of fifteen years, but allowing importation upon payment of a duty, out of which the king might recompense Mansell "according to his wisdom." [1] A patent was granted on these terms,[2] and the monopoly by this means was extended to 1638. But as a matter of fact it was again prolonged before it had expired, by force of an indenture in 1634, which extended it for another term of twenty-one years.[3] Although the unpopularity of this monopoly was evident from the course of the debates of 1624, it was exempted, probably to save the bill, from the act as finally passed.[4] The concession was very likely due to Coke's influence. As lord chief justice he had been a referee in the controversy over Zouch's patent [5] in 1613–14, and more than any other person he had been responsible for the revocation in Zouch's interest of the previous patents and for the compensation allowed therefor.[6] Now, however, he appeared as a strong opponent of this monopoly, and he showed his dislike for the patent in 1621 and 1624. He objected particularly to the length of the term of privilege, and with good reason. Nevertheless, as chairman of the Committee of Grievances he reported in favor of allowing the patent of 1623 to continue for the rest of its term, "but not to be renewed." [7] This recommendation was adopted. The exception, however, was carefully worded so as to lend no new support to the patent. The jurisdiction of the common law courts was not precluded, and was in fact invited by the express wording of the statute: "The said letters patent . . . shall be and remain of the like force and effect, and as free from the declarations, provisions, penalties, and forfeitures before mentioned as if this act had never been had nor made and not otherwise." Bungar, persistent as ever, now proceeded to test the validity of the glass patent under the act. He began to infringe upon Mansell's patent, and prepared to institute a suit at law for avoiding the monopoly. Thereupon the ever-watchful Privy Council intervened and declared that the grant to

[1] C. R. October 12, 1622; February 5, 1623.
[2] Pat. 21 Jac. I (May 22, 1624); Appendix Y.
[3] See Appendix Z.
[4] 21 Jac. I, c. 3, sec. 13. See Appendix A.
[5] C. R. November 14, 1613.
[6] S. P. D. November 17, 1613.
[7] C. J. May 16, 1621; April 19, May 1, 1624.

Mansell was "agreeable to the late statute of monopolies." Bungar was told that he might institute his suit, but in the mean while he was not to encroach upon Mansell's rights. A few months later the Council withdrew the right of trial at law, evidently fearing the outcome. "The Lords declare that the patent shall stand. . . . They think it of dangerous consequence and far trenching upon the prerogative that patents granted on just grounds and of long continuance should be referred to the strict trial of common law, wherefore they order that all proceedings at law be stayed." [2] The patent was restored to very much the same position as before 1623, by an order in Council [3] in 1630, which prohibited the importation of crystal glass except from Venice, upon the representation of Mansell that his undertaking was endangered by certain industries which had only just begun operations upon the continent.

In 1635 Mansell wrote that he had sunk £30,000 in the glass industry, and that before he was able to realize any return upon his investments his workmen were enticed into Scotland, and he was obliged to buy up the Scottish industry at £250 per annum in order to recover his workmen. But upon their return they made such poor glass that he had to introduce a whole company from Mantua. Then his clerk ran away and encouraged a "ruinous" importation of drinking-glasses from France, till the Privy Council intervened. Since then he had made looking-glasses and spectacle-glasses at great cost, but had not raised prices, while he had made the price of window-glass more certain and moderate; and now his men were again enticed away into Scotland.[4] A few years later the familiar complaints were presented to the Privy Council, representing the dearness, badness, and scarcity of glass. This phenomenon was not unusual, and would not be worth noting again but for the action of the Privy Council, which well illustrates the care which it took to admonish patentees of their obligations, while at the same time it was reluctant to acknowledge to others that any wrong had been done. In this case the Lords recorded that they had "found by their own experience that glass was not so fair, so clear, nor so strong as the same was wont to be," and they informed Mansell accordingly. At the same time they warned the petitioners

[1] C. R. June 19, 1626.
[2] S. P. D. December 6, 1626.
[3] C. R. June 25, 1630.
[4] S. P. D. January 28, 1635.

that their complaints were "merely clamorous and causeless," and that if they hereafter troubled the board they would be imprisoned.[1] After the Scottish invasion of Newcastle, Mansell wrote his last appeal to the government. He detailed the condition of the Newcastle works "for window-glass." He said that he had three furnaces fully manned and at work when the Scots invaded Newcastle and dismantled his plant and wares to the value of £19,000. He had still to pay "dead wages" in order to keep his workmen. The glass work in London depended upon Newcastle for coal. If this closed down the workmen would return abroad. He was £1050 in arrears of rent for the year, and "forbears to estimate" the arrears of wages. He implored Secretary Windebank to obtain relief for him, as under present conditions he was able neither to discharge his debts nor to supply the kingdom with glass.[2]

Before he had had time to restore his works, his monopoly suffered its final blow. In 1641 and 1642 Mansell's patent again came before Parliament. Mansell appealed to the House of Lords against those who infringed his patent and he was there regularly and consistently supported.[3] The opponents of the patent, on the other hand, appealed to the House of Commons with complete success. An order was passed for the restoration of certain glass which the patentee had seized with the sanction of the Lords, and Mansell was ordered to attend at the House.[4] Mansell then petitioned the House of Commons, where it was ordered that the patent should be submitted to the investigation of the Committee of Grievances.[5] Finally, it was ordered that the patent should be delivered up to the clerk of the House, and this appears to have abruptly terminated the monopoly.[6] Mansell was not discouraged by his reverses and he restored his works notwithstanding his loss of the exclusive privilege of manufacture.[7] Others were prompt

[1] C. R. and S. P. D. December 15, 1637; January 12, 1638.

[2] S. P. D. September 15, 1640.

[3] Hist. MSS. Com. Rept. iv, House of Lords MSS. Cal. May 13, June 16, July 21, 30, 1641; v, March 24, May 16, 1642.

[4] C. J. April 12, 1642.

[5] C. J. April 15, 1642.

[6] C. J. May 30, 1642.

[7] The following facts relating to the Newcastle industries are derived from quotations from the Common Council Order Books, inserted in Brand's *History of Newcastle* (1789), ii, pp. 42–47.

in taking advantage of the opportunity, and, notwithstanding the Civil War, the glass industry made progress at Newcastle.[1] By 1646 Mansell had at least one rival there, who seems to have enjoyed the preference of the local authorities. The Corporation continued throughout the century to let out the leases to two plants, known respectively as "The New" and "The Old," or "The Eastern" and "The Western" glasshouses. Mansell died in 1653,[2] and shortly afterward the two plants came under identical management. The leases were not apparently held directly by the Henzeys and Tyzacks until 1679, but they were probably the real managers and superintendents, if not the actual undertakers, throughout the whole Commonwealth period. The industry spread to other places than Newcastle,[3] and a writer of the Restoration said that the diversification of the glass industry was the work of the preceding twenty years,[4] and he either knew of no changes before the Civil War or else thought the progress before that time was inconsiderable in comparison with the advance during and after the war. At the end of the seventeenth century there were from twenty to thirty plants, out of a total of about ninety, which were devoted to the production of the finer grades of glass;[5] but the greater part of these had sprung up after the Restoration.[6]

In the somewhat complicated relations of the crown with the glass-makers and of the glass-makers with each other, a few facts require special emphasis. The first patent was strictly legitimate, but the selection of the recipients was unfortunate, for they proved to be helpless without skilled workmen. Such workmen were indeed willing to serve under them, but were unwilling to carry out the condition of the patent that native-born Englishmen should be apprenticed in their art. The patent was an aid in the industry for less than a year, and after that, as far as it had any influence, it

[1] See also, Gray's *Chorographia*, Richardson's reprint, p. 29.

[2] The Dictionary of National Biography gives 1656 as the date of his death, but Brand's quotation from the C. C. Order Books shows that it was 1653.

[3] Dudley, *Metallum Martis*, shows that glass was being made at Bristol in 1665 (p. 65 in 1858 ed.).

[4] C. Merret, editor and translator of A. Neri's *Art of Glass*, 1662, Preface.

[5] John Houghton (editor), Collection for Improvement of Husbandry and Trade, May 15, 1696.

[6] Houghton, *op. cit.* January 29, 1684.

was a handicap. The single contribution made by the patent was in opening negotiation with certain members of the glass-making families of Normandy and Lorraine. But the English branches of these families never owed anything to official monopoly. They did not begin their operations until the patent was practically dead. They established their position by competition in the markets, and by that monopoly only which rigid secrecy gave them. It is apparent that their methods were never learned by Englishmen before the Civil War. The publicity which even then was regarded as one of the most essential requisites of the patent system was thus entirely wanting. That the negotiations were opened by patentees was an incident of little significance, for the conditions at home and abroad being as they were, it was not important how the invitation was extended. On the terms of secrecy, many stood ready to undertake the work in England. On the terms of the patent, none were ready. The patent to Verselini in 1574 was the first of a connected series of monopolies which continued uninterruptedly till 1642. During this period of about seventy years, a privilege originally granted only for Venice glasses was gradually extended in its scope until it embraced the entire glass industry of the British Isles. The grant of 1574, like that of 1567, was in itself quite unobjectionable, but it failed of its object, while the subsequent renewals and extensions under Verselini's successors, Bowes, Zouch, and Mansell, could be justified upon no rational grounds of law or public expediency. From 1592 onward every glass patent was parasitic, being in no instance granted in reward of invention. Royal favorites enjoyed the fruits of others' achievements. Every advance that was made, whether in the fashion of glass or in the method of making it, came from men who knew the monopoly system only as a device to compel them to share with others the fruits of their efforts. In 1640, as in 1570, the leaders of the industry were the Bungars, who had consistently opposed the patentees, and the Henzeys, Tyzacks, and Tittorys, who had submitted to Mansell only under pressure and under the fear of being otherwise altogether excluded from the industry. The fact that the latter were serving under Mansell constituted his only legitimate claim to monopoly. If they had been dependent upon him for their capital, a monopoly for them, in his name, might

have been an encouragement, though it would have been no help to them, their methods being secret, unless others had been unjustly excluded from the market. But, as a matter of fact, they were not in need of capital. They had migrated for religious, not for pecuniary reasons; and until they were dispossessed in 1614, they had depended upon no one for their capital. Mansell apparently did contribute considerable capital after that date. But it should be remembered that a large proportion of this was water, for at least three patents were bought up which would have possessed no value if markets had been open to all. And Mansell had bought out his own partners upon the basis of the speculative value of the monopoly. Finally, much of his wasted expenditure was due to his business methods and to his lack of acquaintance with the industry which he controlled.

CHAPTER VII

THE ROYAL ALUM WORKS

Several attempts were made to establish alum monopolies in the reign of Elizabeth, but each of the attempts was short-lived. An alchemical project for the use of alum and copperas in the transmutation of iron into copper included the queen and Lord Burghley among its active promoters.[1] The most important patent[2] was given to de Vos, and this was assigned to the Earl of Mountjoy, who secured a renewal and a confirmatory act of Parliament.[3] His field of operations was the west shore of the Isle of Wight, called Alum Bay. He was unfortunate from the outset, and apparently had no business capacity. Nevertheless he asserted hopefully[4] that though his subordinates had defrauded him, he would soon make a handsome profit, sufficient to pay his debts, from the sale of alum and copperas at four fifths of its present price. This, he added, would be "to the annoyance of the pope," who was the chief provider of alum in Europe. But he was soon in a hopeless financial position, and never did much with his patent. In 1593 the Earl of Huntington sought to revive Mountjoy's privilege,[5] but apparently met with no encouragement.

The chief interest in connection with the alum enterprise centres about the attempt to build it up as a great government monopoly. The efforts in this direction began early in the reign of James I. They can furnish interesting illustrations to any one who believes in the unfitness of government to administer industrial undertakings. But the whole story of the alum monopoly is such a continuously dismal one that it would not be fair to judge from it what a reasonably business-like government could have accom-

[1] Patent February 14, 1575. See Strype's *Life of Smith*, ed. 1820, p. 100.

[2] Patent June, 1565.

[3] 8 Eliz. c. 21.

[4] "Lord Mountjoy's Treatise," 1566? S. P. D. Add. xiii, 49 (1).

[5] S. P. D. March, 1593, ccxliv, 109.

plished. The alum monopoly was foredoomed to failure from the outset by fatal weaknesses of administration. The king was bent on exploitation, the farmers upon plunder, and the ministers were inefficient, while the honesty of many is doubtful. The enterprise was supported by the usual protestations of lofty benevolence and solicitude for the welfare of the subjects and of the commonwealth in general. But in this case fair words cloaked more hypocrisy than usual. To compensate for the enormous losses involved in actual outlay, and for direct loss to producers and consumers whose freedom of selling and buying was restrained,[1] it is difficult to see how sufficient good can have resulted to any one save a few dishonest farmers and contractors. As an encouragement to domestic production, the project was a failure, and other domestic interests suffered by it. The clothworkers were forced to take an inferior article at an enhanced price. Their only relief was illicit importation, which seems to have been considerable[2] in amount. As a revenue measure the project brought a severe though not unmerited punishment.

The new patent was the result of the discovery of alum deposits, apparently in abundance, in Yorkshire, brought to public attention[3] by Sir Thomas Challoner. Lord Sheffield's interest at court procured the grant[4] in 1607, by representing[5] "how necessary alum was for cloth and leather, how much the pope would suffer, that £40,000 would be saved in money and commodities annually, that many hundreds would be set on work, clothed, fed, and receive religious and other instruction, and that ships and mariners would be maintained to carry coal, urine, alum, etc." The original patentees were Sheffield, Challoner, Sir David Fowles, and Mr. (afterward Sir) John Bourchier. These projectors then arranged to procure capital from several London merchants, who were to erect the necessary buildings, and were to be reimbursed "with consideration for forbearance" before the projectors should receive any profit. Though the building work progressed and the crown extended the period of grace, the business had "many rubs and stops at the beginning." The patentees and their workmen were

[1] Malynes, *Lex Mercatoria*, ed. 1686, pp. 188–189.
[2] See below, pages 85, 101.
[3] Atherton had begun working in 1604.
[4] Pat. 4 Jac. I, pt. 20 (January 3, 1607).
[5] Lansd. 152, fol. 49.

inexperienced, and were, moreover, the victims of pretended experts; and in a short time £20,000 or £30,000 were lost without tangible result.[1] Gerard Malynes wrote [2] to the ministers, offering "to make alum cheaper and six times better in other parts of the kingdom." But £10,000 more was expended in importing workmen from the German and papal alum works. Other domestic supply being suppressed, and importation also prohibited,[3] the new, extravagantly managed enterprise enjoyed a close monopoly, and prices naturally reached a high point. The prohibition of importation was not proclaimed, however, until a pretense had been made of careful investigation, and information was received from the city of London as to prices for the past seven years.[4] Moreover, two commissioners were sent down to the works to investigate the capacity of the plant. They reported favorably, and one of them, Ingram, who continued his active connection with the industry till the end of the reign, declared that the London dyers, to whom some of the alum was given, also approved it, "only they complained of the grossness of it, alleging that it wanted some time to lie and dry." Whereupon the lord treasurer "was well satisfied and thought it a good business to be taken into the king's hands." [5]

The condition of the enterprise at this time does not seem to offer much explanation of the eagerness to make the industry a direct concern of the crown. The original projectors and the merchants made a show of reluctance to part with their interests, but as soon as favorable terms were offered, they readily yielded to the bargain, which relieved them of the management of a nearly hopeless concern, and at the same time promised them recompense for all the sums which they had expended. The merchants, who in modern parlance would be called bond or debenture-holders, resigned their interest for an annuity of £6044 for twenty-six years, while the projectors, or shareholders, compounded for an annual rent of £6000, to begin after seven years.[6] To this another £1000 was added for preachers at the works. Sir John Bourchier and Mr. William Turner, who had been a subcontractor under the private

[1] Lansd. 152, fol. 49.
[2] Lansd. 152, fol. 71 (73), August 29, 1609.
[3] B. M. Proc. Coll. June 19, 1609.
[4] Rep. xxviii, fol. 320b. January 10, 1609; Rem. ii, 340, January 19, 1609.
[5] Lansd. 152, fol. 49.
[6] Indenture, May 6, 1609. Patent Rolls.

management, proposed to farm the business at a fixed rent; and upon a favorable report [1] by Ingram, it was leased to them for £5000 the first year, £2000 the second, and £1000 in five following years, then subsequently £9000.[2] The farmers were to pay the annuities and erect new buildings, so that the output should equal 2000 tons annually. An agreement was made that either party to the bargain might cancel it at the end of the first year.[3] Bourchier and Turner were still enthusiastic and may really have thought that they could carry out the bargain, especially as there was still hope that the further improvement of the works which was contemplated might have the desired result. But within a year, and after the farmers had been allowed an abatement of their rent on account of certain licensed imports, they sought lenient treatment, as the works were not prospering. They complained of smuggling, of infringement of patent, of the necessity of selling at a loss during the session of Parliament, "to avoid their complaint, which my lord treasurer approved of," and of the need of new buildings.[4] They begged to be relieved of the whole business, not doubting that there are others who "have a far better conceit thereof than we have who have adventured in it." They objected especially to the burden of £6000 annually to "the patentees that never laid out penny." But the lord treasurer "was very sharp with them . . . and (said) that he would take order that his Majesty should have his due of them, if all the estates they had in the world would yield it." [5] The confidence of those interested in the work was, however, greater than their confidence in the crown, and before the end of the year 1611, the lord treasurer received a request that Lord Sheffield's annuity "may be made payable out of the Alum rather than the Exchequer," as its sale value would then rise by £300 or £400.[6] But this confidence did not survive the death, in 1612, of the lord treasurer, who was boldly accused, with Turner and Ingram, of fraud in connection with the alum business.[7]

During the year 1612, the alum business was in dire confusion.

[1] May 6, 1609. Guildhall Tracts, Beta, no. 60.
[2] Lansd. 152, fol. 49.
[3] S. P. D. December, 1609, l, 64; Docq. October, 1609; Patent April 20, 1610.
[4] Lansd. 152, fols. 59, 67 (69), 63 (65); Titus, B, v, fol. 342.
[5] Lansd. 152, fol. 49.
[6] S. P. D. November, 1611, lxvii, 37.
[7] S. P. D. 1613, lxxv, 68.

On the 14th of March, Richard Bowlder, who had been instrumental in raising a loan through his correspondents in Middleburgh, and Thomas Jones, a partner with Turner and Bourchier, wrote to one of the Council asking that the works might be sustained and themselves relieved. Their "charges" were too heavy, and they were £4000 in arrears of "rent" to the king, and needed new buildings. They asked special consideration for the next five years, so that the "profits arising in that time by the works may be allowed in satisfaction of the stock already disbursed, and all future profit to remain to the king." [1] On the 11th of May, Turner wrote in desperation to Sir Julius Cæsar, chancellor of the Exchequer. He had written to the lord treasurer an account of the critical state of the alum business, but could get no answer. He had been entreated by Cope, Bourchier, and Ingram to give his assistance, and they had given him great promises of the lord treasurer's favor, which promises had proved to be "all wind." He was informed that most of the work-people had already left, which must result in crippling the work. The year was so far spent that it was impossible to provide new houses or repair the old ones. He urged that it would be rashness to undertake to restore the business without guarantee of adequate support. He concluded: "Unless you take some present course, it is utterly overthrown. . . . There is no other way to preserve the king's honor and profit but to give all the grace and assistance to it you can, and not to lay any burden upon it before it be made a profitable work able to yield 2000 tons of alum yearly, and then no doubt but that it will yield a good rent. Every day is so precious that the loss therein cannot be regained." [2]

On the 20th of May, "Bowlder and Company" (or the Alum Company) "failed and became insolvent," four days before the death of the lord treasurer. Among other creditors was their Middleburgh agent, to whom they owed £19,140. On the 31st of May the bankrupts procured from the king a general "protection" as joint co-partners in the alum business, and subsequently the protection was several times renewed.[3] On the 11th of June they "humbly desire that the privileges granted by patent may be hereafter punctually maintained . . . in consideration whereof they do offer to pay unto his Majesty for the first seven years from

[1] Lansd. 152, fol. 89. [2] Lansd. 153, fol. 103. [3] Guildhall, Beta, no. 60, fol. 101.

midsummer next £1000 per annum, and for the residue of the time remaining in the patent £4000 per annum. . . . Over and above this rent they will covenant to discharge his Majesty from the annuities in present payable to the first undertakers, £6000; and in future, annuities to the patentees, £7000 . . . which they humbly desire may be accepted, being the utmost values which the work may afford. Neither can these payments be raised without great hazard, by further disbursements than already is issued, amounting to above £40,000." [1] A rival offer [2] was made a few days later, and here the proposals which the farmers had just made were tabulated:

1st 4 years		£11,000	£44,000
Rent to the king	£1,000		
Debts (not mentioned by the farmers)	£4,000		
Annuities to the undertakers	6,000		
Next 3 years		18,000	54,000
Rent	1,000		
Debts	4,000		
Annuities	6,000		
Patentees	7,000		
Remaining 18 years		21,000	378,000
Rent	4,000		
Debts	4,000		
Annuities	6,000		
Patentees	7,000		
			476,000

The rival bidder, probably Sir Walter Cope, offered to buy all these interests with £180,000, to be provided by the king (£18,000 a year for ten years), thus yielding a "clear gain" to the crown of £296,000. This proposal shows at what a low rate the creditors were presumed to value their assets due from the Alum Company. The Lords Commissioners, successors to Lord Treasurer Salisbury, were reluctant to take the works into the king's hands, but were seriously embarrassed, since the failure of the enterprise after so much had been done would affect the honor of the king; moreover, in default of the farmers, the king would be indebted to the annuitors.[3] On the 20th of July, Bourchier and Turner each delivered a statement of the financial situation. Bourchier represented that the plant could produce 700 tons per annum, which at £23 would yield £16,100. The cost of making would be £700 and the

[1] Lansd. 152, fol. 107. [2] Lansd. 152, fol. 85. [3] Lansd. 152, fol. 49.

fixed charges would bring the cost to £15,144, leaving £956 for two years to the farmers. In the next two years the gain would be £5956, on account of the increased efficiency of the plant. But after four years, their interest charges would be heavier, so that they must lose £1044 for three years and at the end of seven years £4044 annually.[1] Turner's statement[2] was of the past transactions of the farmers, which gave the following rather startling summary: —

Money sent to Gisborough exchange from thence	£42,216	Received from Gisborough, at London, 1936 tons alum,	
Sir Wm. Clavell's work	2,039	1746 sold at £23	£40,158
Rent to the king	5,000	190 exported at £15	2,850
Annuities by contract	15,010	Sale of coal from coal works	
Materials and tools	16,474	in the country	1,000
		To balance the account	36,732
	80,740		80,740

On the 23d of July the farmers signed a Treasury minute[3] at York House, binding themselves to carry on the work till a new adjustment could be reached, and it was agreed that some merchants should be sent to inspect the works. Mr. Robert Johnson and three others were accordingly sent, and on the 28th of August they reported[4] that there were six buildings, all erected before May, 1609, except part of one. The normal cost of one building per year, at maximum output, they found to be: —

Coal, 1000 chaldrons @ 13s. 4d. "laid at the work"		£666 13s. 4d.
Urine, 10 tons weekly, 500 per annum @ 12s.		300
Wages, 60 men @ 8d. per diem		600
Carts, 18 cars and drivers, 6 months @ 10d. per diem		100
Wood		75
Lead		36
Wrought iron		96
Brick		40
Coopers, smiths, carpenters, wages & materials		66 13 4
Chief workman & his servant		60
Transport to seaboard, 166 tons @ 6s. 6d.		53 19
Transport to London @ 12s.		99 12
For one house	£ 2,193 17s. 8d.	
For six	13,163 6	
Total charges less certain deductions	12,563 6	

[1] Lansd. 152, fol. 87.
[2] Lansd. 152, fols. 97, 98.
[3] Lansd. 152, fol. 99.
[4] Lansd. 152, fol. 109.

The normal output at maximum efficiency was found to be 166 tons per annum each, or 1000 tons @ 24£ =		£24,000
Extraordinary charges since May, 1609:		
Finishing a house	£2,000	
Repairing	300	
New pits and cisterns	100	
Experiments	500	
By reason of wet seasons	1,500	
"and many other casualties"	[ ]	4,400

They found defective and rapidly decaying furnaces; coal and wood not laid in; in some houses 500 workmen and colliers unpaid for three or four months and more, threatening to desert the work upon which eight hundred families depended. They stated that "£6000 would not set the works aright."

The outcome of Johnson's investigation was that he with Ingram and Sir Walter Cope resolved to take the control of the works into their own hands. To this end they made a proposal on the 24th of September, which was accepted with little modification by the Treasury Commissioners on the 26th of February, 1613.[1] The plan adopted was not substantially different from that proposed on the 12th of July, 1612, by Cope, but which at that time Ingram stated both he and Sir Julius Cæsar opposed,[2] as they saw the peril of taking the work out of the hands of the farmers and restoring it to the king. But within a few months Ingram joined in the petition, and Ingram, Johnson, and Cope were successful. The new scheme, as a matter of fact, provided[3] that they should turn over the works, free of incumbrance, to the king at the end of four years. They did not do so, but continued to operate the works, taking the place of the farmers, whom they promised to recompense for their outlay, along with the merchants and promoters. The new adjustment did not mend matters. The farmers (*i. e.*, the Alum Company) complained that the new contractors were not meeting the obligations which they had agreed to assume;[4] and the creditors, one hundred and eighty persons, to whom the alum company owed upwards of £44,000, besieged the ministers for permission to sue for recovery of the debts; and the annuitors petitioned for an order for the

[1] Lansd. 152, fol. 91; Titus B, v, fols. 337b, 338, 342.
[2] Lansd. 152, fol. 49.
[3] Lansd. 152, fol. 95.
[4] S. P. D. June, 1613, lxxiv, 19, 20, 21.

payment of their promised incomes. The king shielded the Alum Company by "protections," as long as he could and then gave orders to the Lords Commissioners for a new adjustment. The floating debts were scaled down to £30,000, and in consideration for undertaking to meet these, and also upon the report of the depleted condition of the works, the new contractors seem to have been granted a modification of their contract.[1] But in 1614 protection had to be granted again to Bourchier and Turner, "the alum works being not yet settled." [2] Meanwhile the works had formally passed into the king's hands,[3] and the new contractors became managers for the crown. They went down to the alum works provided with money from the king, with which, according to their own statement, they paid heavy arrears of wages, made extensive repairs, and re-stocked the works with provisions and materials. Then they let the works on a short lease to the most experienced persons they could find, stipulating for a fixed price for the alum. After that Ingram and Johnson claimed to have made considerable advances out of their private purses. Their proceedings were approved by the Treasury Commissioners,[4] but this solution proved as disastrous as the other had been. Johnson submitted an itemized statement,[5] showing that the king had disbursed, while the works were in his own hands, £72,760,[6] including the debts of the Alum Company, now freed from insolvency; and that the immediate output of the works had resulted in loss rather than gain. The money advanced by the king was absorbed by the lessees without even keeping up the repairs on the works or paying the workmen's wages, according to the claim which Ingram afterward made.

Suffolk, the new lord treasurer, determined in 1615 to farm the work once more, in order to stop the king's unprofitable disbursements; and he was obliged to accept the bid [7] of Ingram, Johnson,

[1] Lansd. 152, fol. 49.
[2] Sign Manual, iv, no. 71.
[3] Docq. April, 1613.
[4] Lansd. 152, fol. 49.
[5] Lansd. 152, fol. 53.
[6] Various estimates of the losses of the king in this business range from £65,650 (Somers, *Tracts*, 1619, ii, pp. 372, 380) to £120,000 (Hist. MSS. Com. Rept. House of Lords Calendar, May 27, 1663, vii, 172). Malynes (*Lex Mercatoria*, p. 189 in ed. 1686) wrote in 1622: "His Majesty hath been pleased to enter into the said works and laid out so many thousand pounds as is not fitting to be expressed."
[7] Lansd. 152, fol. 65 (67).

Freeman, and Lowe, who received a grant for twenty-one years, with a subsidy of £10,000 in cash, agreeing to make 1800 tons yearly at £10 per ton. Simultaneously, a grant was passed to other parties conferring the office of receiving, transporting, and selling the alum produced by the new farmers.[1] The king's only income from these two transactions was to be the difference between the ultimate market price and the £10 per ton at which his agents were to buy, and the agents were to receive from the king a "pension" of £766 per annum. The farmers, Ingram, Johnson, Lowe, and Freeman, did not engage to relieve the king of the annual obligations to undertakers and patentees. But even under these conditions they did not prosper. Out of the £10,000 subsidy, 8000 was exhausted upon repairs and accrued wages and the best subcontract that could then be made took the remaining £2000 as a bonus to two makers, Sir John Brooke and Thomas Russell, who then agreed to produce 1800 tons annually at £9 per ton. Ingram claimed that the slight margin of profit left to him and his associates was soon absorbed by other emergency expenses.[2] Ingram's reputation for honesty does not seem to have been very flattering. His continued connection with the alum business was ascribed at the time to the anxiety to remove him from the court. Chamberlain, the court gossip, wrote [3] to Carleton that Ingram had been made cofferer of the king's Household, but that the officers of the Green Cloth and the Black Guard had declared that they "would rather be hung than have such a scandalous fellow over them." Later, he wrote again [4] that, "Ingram delays leaving his place at court; he is to go to Yorkshire on the alum business; his conduct is much canvassed." Finally he wrote [5] that Ingram had with much difficulty been ejected from the court.

Complaints of subsequent dishonest dealings at the works then began to come in [6] to the ministers, until a commission was appointed [7] to inquire into the alleged frauds. The inquiry dragged on [8] from 1616 to 1619, and brought to light a considerable amount of infor-

[1] S. P. D. July, 1615, lxxxi, 13, 14; Sign Manual, v, 29.
[2] Lansd. 152, fols. 49 ff.
[3] S. P. D. March 2, 1615.
[4] S. P. D. April 7, 1615.
[5] S. P. D. July 13, 1615.
[6] S. P. D. December 1, 1615; March, 1616, lxxxvi, 116.
[7] Sign Manual, vi, no. 10, March, 1616.
[8] S. P. D. March, 1616, lxxxvi, 117; May 1, 1619.

mation damaging to many of the parties concerned in the business, but found no satisfactory solution for the perplexing state of affairs. Ingram asserted that his last efforts would have been crowned with success but for an accident which could not have been foreseen, and he made a plea for further indulgence. But Lowe submitted a petition [1] to the commissioners confirming the charges which had already been made against the new farmers. Ingram and Johnson, he said, had persuaded him, an inexperienced man, to enter into a partnership with them and with Martin Freeman. Lowe's charges were especially directed against Johnson, who had promised to take a fourth part and manage the enterprise, but who then withdrew upon the pretext that it was not proper for him, in his official position, to be openly connected with the work, "and that he could help better outside the society." He took advantage of Lowe's ignorance and drove a hard bargain with him. Johnson continued to guide the industry and obtained various new sums from the king. Lowe was induced to sink £20,000 and was now in despair, since he was unable to produce the amount contracted for. He implored a loan of £5000 from the king, "and if he is successful and brings income to his Majesty" prays that he "may be reimbursed as many others have been in this business." As a result of the inquiry, numerous readjustments [2] were made in the relations of the various interested parties to each other, but nothing could be done to remove the real difficulties. Meanwhile, in the course of a protracted chancery suit, the Middleburgh agent of the alum company was still struggling to obtain justice, which was delayed by various legal tricks.[3] At this time also the lord treasurer was being tried in the Star Chamber for fraud and corruption in the alum business and other affairs.[4]

Ingram still retained his intimate connection with the work, in spite of all opposition. If he had been an honest man, it is probable that he would have been eager to withdraw. But he held on to the seemingly hopeless undertaking, making the only profits that were being cleared by any one. His fall from favor was finally due to

[1] Lansd. 152, fol. 55.

[2] Sign Manual, x, no. 2, March, 1619; xi, no. 9, November 4, 1619; x, no. 70, July 25, 1619; Grant Bk. pp. 273, 277.

[3] Guildhall, Beta, no. 60. See above, page 86.

[4] S. P. D. October 30, November 13, 1619.

a project which succeeded in interesting more powerful courtiers than his own patrons. The plan originated with Sir John Bourchier, who was freed from liability for arrears of debt due to the crown since 1611 in the alum business, "it being found on examination that he ought in equity to be freed therefrom." [1] This indulgence made him ambitious for a new speculation. In the next year he was ready with a proposition which the king committed to investigation, "the works being supposed capable of yielding profit to his Majesty." [2] His plan was to become the king's farmer for alum and for soap.[3] The soap monopoly, destined to become very important in the following reign, was just beginning to be considered at this time; and its possibilities were shrewdly foreseen by Bourchier, who apparently thought it a wise policy to combine with this unhappy undertaking one with prospects of good success. The king had tried in vain to withdraw from his alum business, but it always came back to his hands. If the king could not be rid of it, why not redeem it, or conceal its miserable plight by consolidating it with a young and healthy project? In December, Bourchier submitted a statement [4] of the benefit the king would receive by working the alum and soap business on his own account, and asked that the alum works should be transferred to him from Ingram, and that the soap scheme should be further considered. He offered [5] to assume responsibility for an annuity of £2000 which had been promised to Secretary Conway out of the alum profits. Bourchier seems to have felt the importance of Conway's influence, for shortly afterward he wrote to Conway that he had intended to offer £10,000 to the king for the farm of the two monopolies, but now proposed to pay the king £6000 per annum, and to increase Conway's interest. He claimed that the king would gain £20,000 by a tax of £2 per ton on soap, and might keep a diamond (Sir Paul Pindar's) worth £35,000.[6] Fully £80,000 would be necessary, but the king's help

[1] S. P. D. June 18, 1622.
[2] S. P. D. July 12, 1623.
[3] S. P. D. August 13, 1623.
[4] S. P. D. December, 1623, clv, 25.
[5] S. P. D. December, 1623, clv, 40.
[6] When Buckingham went abroad with Prince Charles, he took Sir Paul Pindar's great diamonds, promising to "talk with him about paying for them." (S. P. D. February 27, 1623.) James coveted the largest diamond, valued at £35,000. Later, Charles "purchased" it for £18,000 to be paid out of the profits of the alum works. S. P. D. July 20, 1625.

would not be needed. Sir Arthur Ingram was to be recompensed for the loss of the alum works.[1]

Bourchier soon after tried a less expensive way of disposing of Ingram. Instead of buying him out, Bourchier and others brought charges [2] against Ingram for misappropriation of funds. Ingram, it was claimed, had wrongfully gained £53,000 in seven years, had not disbursed funds entrusted to him for the works, had not performed his covenants, and had abused his work-people. A commission [3] of investigation was accordingly constituted. In the interval before the Exchequer Commission began its investigation, Bourchier renewed his offers [4] of money to Conway, having already suggested to him that he might make £3000 per year by securing the monopoly of exporting soap.[5] Conway wrote [6] on behalf of Bourchier to the chancellor of the Exchequer, before whom the hearings were held. Shortly afterwards Bourchier wrote [7] to Conway, claiming to have proved his charges against Ingram, "who says he will sell all his land rather than give up the works." Bourchier, however, did not in the end obtain the grant which he sought. He seems to have quarreled with his partners. Turner made a rival bid, and Bourchier wrote to Conway offering £1000 more than any bid Turner might make.[8] It was probably intended that Bourchier should have the grant, for Conway procured a warrant for a grant to himself of £2000 out of the profits of the alum and soap works, "in compensation for his great trouble about them." [9] But the king died before Bourchier received the lease, and nothing more is heard of the scheme to combine the alum and soap projects, though Bourchier still maintained his connection with the soap business.[10] Ingram, however, did not escape the investigation. He wrote [11] to Conway, excusing himself for the non-performance of his contract. He was ready to give up the £6000 which he had already

[1] S. P. D. January 29, 1624.
[2] S. P. D. March to July, 1624, clxi, 70, 71; clxiv, 98; clxix, 54, 55.
[3] S. P. D. March, 1624, clxi, 72.
[4] S. P. D. July 17, 1624.
[5] S. P. D. May 18, 1624.
[6] S. P. D. Conway's Letter Book, p. 140, Cal. 1623–25, p. 314.
[7] S. P. D. August 24, 1624.
[8] S. P. D. September 6, 1624.
[9] S. P. D. December 14, 1624.
[10] See chapter on the Soap Corporations, below.
[11] S. P. D. September, 1624, clxii, 13–16.

lost, but claimed £13,000 as partial compensation for surrendering his lease of the works which he had "brought to so good a condition." He even offered "to repair the houses . . . and to supply such stock as is required by the lease." But his promises were unavailing. He "was fetched up by a pursuivant from Yorkshire, where he was all in his glory, to answer an account about the alum mines, where he is found £5000 short." [1] The evidence taken by the Commission [2] was so damaging that Ingram had to retire from the enterprise. But his influence with the king caused delay [3] of punishment, which he appears finally to have escaped altogether,[4] and he drove a very good bargain upon his withdrawal.[5] A year later he was reported as owing £1550 to the crown on account of the alum business.[6]

During Ingram's management of the works, from the close of the investigation of 1619 to the more effective one of 1624, the total output of alum was only 1565 tons, or an average of 313 per year, while no less than 2000 per year was regarded as necessary in order to clear expenses.[7] The aggregate receipts during this period amounted to less than £27,500, and out of this gross yield there was disbursed the sum of £22,150. Contracts absorbed £16,716. Ingram let one contract to himself for £8180. £2610 were paid for interest and brokerage. Wages and "entertainment" took £776, of which manual labor required only £83. A proclamation secured in 1619 cost £80, and the preachers were paid £160. Of the difference between the receipts and expenditure, £5350, only £3900 ultimately reached the Exchequer, and that not until 1633. The remainder consisted principally of bad debts, which were assigned to the accountants in lieu of an agreement to pay them £1000 for their services.[8] But the account rolls do not tell the whole story. The king made large disbursements to stock the

[1] S. P. D. October 23, 1624. Chamberlain to Carleton.
[2] Dep. by Com., Exch. K. R., Hil. 22 Jac. I, no. 28.
[3] S. P. D. November 28, 1624.
[4] See article on Ingram in Dict. Nat. Biog.
[5] S. P. D. February 22, 1625.
[6] B. M. Add. 34,318, fol. 40.
[7] See above, page 86.
[8] Audit Office Declared Accounts 2487, 354. Delivered May, 1633. The account extends from 1619 to 1628, but nothing was done at the works for some time after Ingram's removal. See B. M. Add. 34,318, fol. 40.

works. Ingram received the money and sold the equipment to the sub-contractors, pocketing the proceeds.[1] Finally, the king was paying to the original projectors pensions which did not appear in the alum accounts.

The alum monopoly had been especially excepted from the Statute of Monopolies,[2] and the work was reorganized after the exclusion of Ingram. Pindar, who had sided with Turner in his rivalry with Bourchier, became the acknowledged chief of the enterprise, and he with Turner farmed the works on a new lease at £11,000 per annum.[3] One of the earliest acts of King Charles had been to issue a proclamation [4] renewing the prohibition of the importation of alum. The preamble recited that "that great and commendable work of making alum of the native mines of this our kingdom, not many years since discovered within our county of York, is, by the disbursement and expense of sundry great sums of money made by our most dear and royal father, brought to such perfection as there is now no doubt or question but sufficient quantities of good, well roached, and merchantable alum may be made, as well for supply of our own dominions of so necessary and useful a commodity, as also for foreign vent and sale of great quantities thereof with other our neighbor kingdoms." [5] At the time of this emphatic declaration of success, the works were practically suspended. The first operations at the revival of the undertaking ended in disaster. Loss resulted from plague in the north, and two ships were captured by pirates. The first quarter's rent was therefore remitted.[6] At this juncture Baron Sheffield, who had become Earl of Mulgrave at the accession of Charles I, sought to assume the management of the works. It was principally upon his property that the alum mines were situated, and various annuities in the business had been transferred to him by assignments,[7] so that his interest amounted to about £8000 a year.[8] To recover this income,

[1] Dep. by Com., Exch. K. R., Hil. 22 Jac. I, no. 28.

[2] 21 Jac. I, c. 3, sec. 11. See Appendix A.

[3] Docq. April, 1627.

[4] B. M. Proc. Coll. April 13, 1625.

[5] Cunningham, ii, p. 293, n. 3, cites this proclamation as apparent evidence of the success of the undertaking. But the sincerity of the preamble is doubtful.

[6] S. P. D. February 23, 1627.

[7] See S. P. D. December 24, 1623; August 13, 1624.

[8] Harl. 3796, fols. 75 ff.

he asked permission to work the mines with a stock to be provided by the coinage of £100,000 of copper money.[1] He failed, however, to receive the authority required. The plants on his estates were of so little value, notwithstanding the thousands of pounds that had been expended upon them, that the farmers, Pindar and Turner, tried the experiment of abandoning them altogether, and they set up new works near the Tower of London. But the inhabitants protested [2] vehemently to the Council against the "insufferable and contagious annoyance" of the "loathsome vapor." Pastures were said to be tainted and the fish poisoned. The matter was referred [3] to the College of Physicians, who reported unfavorably to the works, and it was resolved that the undertaking was "fit to be suppressed."[4] The order was shortly afterward renewed,[5] but compliance was still delayed.[6] Finally the farmers were persuaded to transfer the plant to Newcastle, and the Council wrote [7] to the mayor and aldermen of that town directing their consent and assistance. They were not to fear for their salmon, for the farmers had assured the king that nothing should be let into the river to hurt the fish. Bourchier took advantage of the troubles of the farmers to offer better terms [8] for a lease from the king, but he was disappointed, perhaps because of the king's obligations to Pindar, who, although he had not been paid for the great diamond,[9] nevertheless continued to loan large sums to his royal master. He was therefore in high favor, had already been made a collector of customs and was now unmolested in the alum farm. The king anticipated large profits from Pindar's operations, and discharged a debt which with interest amounted to £13,350 by assigning payment out of the alum farm of 1630 and 1631.[10] Pindar apparently returned to Yorkshire directly after the London experiment, without attempting to start a new industry at Newcastle. When his lease was about to expire, in 1637, he wrote [11] to the king that he had recently "much advanced" the alum

[1] S. P. D. June, 1627, lxviii, 43.
[2] C. R. July 20, 1627.
[3] S. P. D. July 23, 1627.
[4] C. R. July 25, 1627.
[5] C. R. September 12, 1627.
[6] C. R. December 12, 1627.
[7] C. R. January 28, 1628.
[8] S. P. D. 1628, cxxvi, 58.
[9] Carew, *Hinc illae Lachrymae*, pp, 20, 21.
[10] S. P. Docq. July 4, 1628.
[11] S. P. D. C. I, cccvii, 57. The calendar assigns "1635?" as the date of this letter. It probably should be "1637."

work, which had hitherto been only a burden; and his assertion is confirmed by other evidence.[1]

It will have been observed that the entire history of the alum monopoly during the period of the first lease granted by Charles I was one of experiments. It was only near the end of this period that the alum business was redeemed from the consequences of the mismanagement under James I. Pindar, however, had so far succeeded as to lead the king to an effort to derive an increased revenue from the work. As early as 1630, he planned that at the expiration of Pindar's lease a new farm should be let for £12,500 instead of £11,000.[2] The king also took measures to appropriate the larger share of the rents. The mutual relations of the crown and the chief annuitant had long been complicated. As early as 1624 a statement had been prepared in the Exchequer showing that the money which Sheffield received from the alum works, together with arrears of various rents and taxes owing by him to the king, exceeded the whole amount due to him from the alum by £4925.[3] There seems to have been an attempt to challenge the terms on which he claimed to hold his property under grant from Queen Elizabeth.[4] The dispute was settled before Pindar's lease expired. "In Hilary term, 9 Carol. prim., Edmund Earl of Mulgrave and others levy a fine to the king and his heirs and successors of the castle and manor of Mulgrave, and of all the lands and tenements in and belonging thereunto, formerly granted to the ancestors of the said earl by Queen Elizabeth." An indenture was then made with Sir John Gibson for the reversion of the farm of the works after the expiration of Pindar's lease. The £12,500 provided for in 1630 was reserved, £10,860 for the king, and £1640 for the Earl of Mulgrave. The property was then restored to the earl with the alum rents reserved.[5] Pindar tried to obtain a renewal of his lease,[6]

[1] S. P. D. May 26, December 20, 1637.

[2] S. P. D. June 26, 1630; Patent, July 14, 1631.

[3] S. P. D. August 13, 1624.

[4] Hist. MSS. Com. Cal. *Salis. Papers*, iv, p. 105.

[5] *A Brief Narrative of the several remarkable Cases of Sir William Courten and Sir Paul Pindar*, 1679, p. 10. Prof. Firth, in the article in Dict. Nat. Biog. says of Edmund Sheffield that the causes of his defection from the king in 1640 are obscure. The above proceedings seem to throw some light upon the subject. This was the dispute with Strafford to which Prof. Firth refers.

[6] S. P. D. C. I, cccvii, 57.

but, failing in this, purchased the lease which Gibson and his principal, the Earl of Strafford, had procured. From 1640 to 1648 Pindar continued to conduct the undertaking, paying the rents both to the king and to the Earl of Mulgrave, "notwithstanding the interruption of making alum during the war." [1] During the whole reign of Charles I, Pindar's peculiar financial relations with the king render it very difficult to form even an approximate estimate of the success of the industry. His greatest source of income arose from his office of farmer of the customs. But his loans to the king were lavish to the point of recklessness,[2] so that he may have advanced the alum rents at his own cost. The evidence for the prosperity of the undertaking rests chiefly upon his own testimony and upon that of his executors.[3] But at all events, he was reluctant to resign his lease in 1648.

The Earl of Mulgrave's petition for restoration to the mines came before the House of Commons in 1647.[4] The committee to which the alum business was referred reported in favor of the earl, and also submitted the petition of the dyers of London, who complained of the "grievous and intolerable burden" of the alum monopoly. On the recommendation of the committee, the House ordered that the patent as well as the lease should be canceled,[5] and "that the committee have a care that the alum business do not decay." In this vote the Lords concurred.[6] Pindar petitioned that he might not be required to surrender his patent until he had been given opportunity to justify his title.[7] On the 4th of May the House of Lords ordered him to surrender his occupation to the earl,[8] to which Pindar replied by asking them to suspend the order. In June the relatives of the Earl of Mulgrave, who claimed an interest in the work, petitioned that Pindar should be allowed to continue his connection as formerly; and Pindar renewed his own petition while the earl put in a counter-petition. Finally, it appears that

[1] *Brief Narrative*, pp. 10, 11; Egerton, 2541, fol. 266; Harl. 3796, fols. 75 ff. See above, page 42.

[2] "This Sir Paul never fails the king when he has most need." S. P. D. April 1, 1639.

[3] The authors of *Hinc illae Lachrymae*, and *Brief Narrative*.

[4] C. J. May 13, 1647.

[5] C. J. March 16, 1648.

[6] L. J. March 31, 1648.

[7] Hist. MSS. Com. Rept. vii, p. 18, Cal. House of Lords MSS. L. J. x, p. 163.

[8] *Brief Narrative*, p. 11.

some sort of an amicable understanding was reached between Mulgrave and Pindar.[1] With the cancellation of the alum lease the works ceased to enjoy a monopoly, and the means of measuring their prosperity are therefore unsatisfactory. It is known that new ventures were undertaken in Yorkshire, and they seem to have been more vigorously pushed than the industry still carried on upon the Mulgrave estate.[2] The latter works were the subject of an official inquisition in 1662, which showed them to be in a very hopeless and dismantled condition, and owing to the workmen large arrears of wages.[3] In the next year a bill was brought into Parliament to restore the royal monopoly, but it was dropped after the first reading.[4] In 1679 the executors of Pindar were not able to show that more than 15,000 tons had been produced on the estate since 1648,[5] an average of only 500 tons yearly.

The Yorkshire grounds, therefore, had no marked superiority over other alum deposits. The same comparisons can be made for an earlier period, for the original Yorkshire patentees had had to buy out several valuable privileges which had been previously granted, and which had been excepted from the Yorkshire monopoly.[6] One owner who was excluded by the revocation of his patent offered "to make alum cheaper and six times better in other parts of the kingdom." [7] The alum industry was the most important business venture of King James, and it failed, partly through the business inefficiency of the king and his ministers, partly through the gross and culpable mismanagement of those to whom the work was entrusted. There has scarcely been a time in modern English history when it would have been more disastrous to the government to act as entrepreneur than in the reign of James I. No king was surrounded by a greater host of gentlemen fortune-seekers; no king was favored with fewer statesmen of a high order of ability. None of James's ministers had genius combined with patience; with the

[1] L. J. May 9, 25, June 13, 20, 27, 1648; Hist. MSS. Com. Rept. vii, 24, 27, 32. The authors of the *Brief Narrative*, however, refer (p. 11) to the ejectment of Pindar without alluding to any reconciliation.

[2] C. J. April 2, 1657; Cal. House of Lords MSS. L. J. xi, p. 528.

[3] Dep. by Com., Exch. K. R. 1662.

[4] May 27, 1663. Cal. House of Lords MSS. L. J. xi, p. 528.

[5] *Brief Narrative*, p. 11.

[6] Vesp. C. xiv (2), fols. 8, 12.

[7] See above, page 84.

exception of Sir Julius Cæsar none had any capacity for mastering details. In public works of any sort, therefore, the government was at the mercy of those who possessed a large amount of address and a moderate amount of ability. Sir Arthur Ingram, who, more than any other, was responsible for the conditions that prevailed at the works, was allowed to follow this enterprise for the king's glory, because he was too much of a rascal to be tolerated even at court, yet had to be provided for. He was permitted to retain his connection long after his unscrupulous methods were well understood. The ease with which about £100,000 was drawn from the king in successive installments, only to melt away imperceptibly with but little advantage to the works, would be incomprehensible if it were not known how easily others secured large amounts from the same source. The most that any one of the several commissions of inquiry could discover as a result of all the outlay were a few inadequate buildings, sadly decayed, and a body of desperate and starving workmen. The meagre and irregular output could not possibly have answered the needs of a cloth producing country, and illicit importation must have been more general than current complaints indicated. Prices were raised and the quality of the product deteriorated. There can be no possible doubt as to the commercial failure of the monopoly. Notwithstanding the exclusive right of manufacture, and the prohibition of importation, the industry did not return to the crown a pittance of the investment, while no reasoning from the facts can demonstrate that, by the monopoly and protection afforded, the industry was "established."

CHAPTER VIII

THE CLOTH-FINISHING PROJECT

THE Clothworkers' Company of London was divided in its attitude upon the subject of the finishing of cloth before exportation.[1] Owing to its peculiar relation to other clothing interests, it was remarkable in the variety of economic and industrial interests within its membership. The wealthier portion, primarily interested in trade, dominated the court of the company, but the industrial members were strong enough to assert their interests, and with royal aid they triumphed for a time over the commercial elements. They failed not because they were politically weak, but because their project was economically unsound.

In the first Parliament of James I, a petition[2] was received from the artisan clothworkers of London, protesting against the numerous private patents for export of undressed cloth and praying that the statutes of 33 Henry VIII, c. 19, and 8 Elizabeth, c. 6, should be enforced. It was asked that the artisan clothworkers might be officially recognized as an independent company and duly incorporated. Later the Earl of Salisbury received a petition from "the poor of the company of the clothworkers" (meaning the artisans), in which they referred to their late bill and the evidence given in support of it. This claimed that none but the Merchant Adventurers and private licensees derived any gain from the export of "whites" and that the king, the realm, and the clothworkers lost both in "treasure" and "honor." The conclusion stated that by requiring the finishing to be done in England the king would gain 18d. in custom for the imported dyestuff, and the clothworkers 20s. upon every cloth.[3]

The Merchant Adventurers replied[4] that the kind of cloth that was exported "white" was unable to bear the crude English dyeing processes, which were perfectly suitable for the cloths

[1] Unwin, pp. 124–125.
[2] S. P. D. March, 1604, vi, 109.
[3] S. P. D. April 3, 1606.
[4] S. P. D. April, 1606 (xx, 10).

which the English clothworkers were then finishing for domestic sale, as also for the new draperies. Dyeing of all cloths at home would be expensive and worse than useless, for it would not suit the continental taste. The merchants prophetically claimed that any such project would only result in driving foreigners to compete with the English in the earlier as well as the later processes of manufacture. They pointed out [1] that in Spain the war had built up native manufactures which were eager to claim the whole Spanish and colonial market; that France was anxious for an excuse to restrict the import of English cloth in order to encourage her own cloth trade; and that Germany and the Low Countries had superior facilities and skill in dyeing and dressing, and were in a favorable position to take over all branches of the industry. Therefore, the first difficulty to surmount, if the project were to be tried, was to find some suitable means of exporting and disposing of the finished cloths, for the Merchant Adventurers urged that they would not be able to find a market for them.[2] Alderman Cockayne had offered to transport and sell as many cloths as the clothworkers could finish.[3] But it was several years before his proposition found acceptance. Cockayne continued his interest and stood ready to afford to the artisan workers the capital which they needed. With his backing they once more appealed to the crown early in 1613, and were supported by the Dyers' Company.

The trading members of the Clothworkers' Company disclaimed all connection with the project, and they endeavored to call the yeomanry to account.[4] The situation abroad, however, favored the merchants of the Clothworkers', rather than of the Adventurers', Company. The unprotected English cloth-dressing industry had already so far succeeded in the oriental markets as to alarm the Flemings, and in 1612 English dressed cloth was excluded from the Low Countries.[5] This was a serious matter for England and added weight to Cockayne's proposals. Domestic affairs also favored the project, for in 1614 James, in disgust, dismissed the Addled Parliament, and at once undertook to look

[1] S. P. D. April, 1606 (xx, uncalendared).
[2] C. R. December 18, 1613; July 12, 1614.
[3] S. P. D. April, 1606, xx, 9.
[4] See Unwin, p. 124, quoting the Clothworkers' Court Book, March 8, 1613.
[5] Durham, *Relation of the Crown to Trade under James I*, R. H. Soc. 1899, p. 210.

for new sources of revenue without the aid of Parliament, and this scheme afforded a strong fiscal temptation. Some powerful courtiers had been interested, the project was in harmony with the king's economic prejudices, and it appealed strongly to the mercantilist ministers. The draft of a possibly unpublished proclamation affords an excellent illustration of the attitude of the government. It recites the advantages and anticipates the objections to this project, but promises that there shall be "no stand of cloth nor abatement of prices, as may be to their prejudices. And therefore they may go on in the courses of their former trading, leaving it to our care and providence to introduce this great and happy alteration to the better, without any interruption of trade or pulling down of price in the mean time." The king avows that he is friendly to the Merchant Adventurers and not unfriendly to their foreign customers, "but only we are willing to advance the dowry and stock of our kingdom; and wherever we see apparent means of doing our people further good, not to tie ourselves to the simple and positive degrees of their welfare, but to proceed from good to better, and to make posterity beholden to our times, for going through with that whereof our ancestors have only sown the seed, and not hitherto reaped the fruits." [1] Cockayne's proposals were carefully considered in the Privy Council,[2] and as a result the exportation of undressed cloth was prohibited [3] and a new company of Merchant Adventurers was announced, with Alderman Cockayne at its head. To this company any one might subscribe, and thus be free to engage in the trade of finished cloth. The original company of Merchant Adventurers were thus left without an occupation, as they understood the market too well to be willing to undertake to dispose of the English finished cloths, in the regions of their intercourse. Their charter was therefore suspended.[4]

In February, 1615, the privileges of the old company were formally surrendered and a charter given to the new company.[5] But the new company was not yet prepared to effect the reforms for

[1] Soc. Ant. Proc. Coll. May 25, 1614.
[2] C. R. December 18, 1613, July 12, 1614.
[3] Soc. Ant. Proc. Coll. July 23, 1614.
[4] Soc. Ant. Proc. Coll. December 2, 1614.
[5] Gardiner, ii, p. 387; Unwin, p. 182.

which it was constituted, and asked to be allowed to export unfinished cloths till there was time to build up a trade in dressed cloths.[1] The merchants were allowed to export as many undressed cloths as they pleased, upon undertaking to receive from the finishers 6000 pieces the first year, 12,000 the next, and 18,000 the third year.[2] Even with this concession, the company handled its part of the contract in a very unsatisfactory manner, and the Council began to show impatience.[3] In order to see what terms could be secured from the old Merchant Adventurers they were authorized to assemble for the purpose of considering the subject.[4] But the former cloth merchants adhered to their original conviction, and would not undertake to concede more than to experiment with a very few finished cloths.[5] The new company was suffered to continue its operations, but was ordered peremptorily to buy up an unlimited supply of cloth which was offered by the Gloucestershire workers, although the company protested that the work and material were bad.[6] There were also complaints from other quarters about the "stand" [7] of cloth.[8] It was seriously proposed to put in force the most arbitrary sumptuary regulations in order to provide a home market for the cloth, since the trade was in the utmost confusion.[9] Cockayne was summoned before the Council and told to see that the merchants devised some means to remove the glut, "whereof it behooved them to have a care at their uttermost peril." They were required "to resolve amongst themselves whether they would go forward in the work of dyeing and dressing." [10]

[1] Chamberlain to Carleton, S. P. D. February 23, 1615.

[2] C. R. April 7, 9, 1615.

[3] Bacon to James I, August 12, 1615, February 25, 1616; Spedding's *Letters of Bacon*, v, pp. 178, 256.

[4] S. P. D. February 7, 1616.

[5] S. P. D. May, 1616, lxxx, 110.

[6] S. P. D. August 2, 6, 1616.

[7] Meaning "stop" or "interruption" of trade. Cf. Johnson's Dictionary, which quotes from Bacon: "The greatest part of trade is driven by young merchants, upon borrowing at interest; so as, if the usurer either call in, or keep back his money, there will ensue presently a great stand of trade."

[8] Bacon to the king, September 13, 1616; *Letters*, v, p. 74.

[9] Lansd. 152, fol. 271; S. P. D. J. I, lxxx, 108; S. P. D. November 29, 1616; C. R. June 2, 13, 1616, September 4, 1616.

[10] They replied with a long petition, which the Council ordered to be condensed. C. R. September 11, 12, 16, 1616

Meanwhile events abroad were adding to the difficulties at home. The Dutch made vigorous efforts to develop a weaving industry to supply all their own needs, and offered a substantial bounty; and other countries joined in retaliation.[1] The struggle can hardly be said to have been advantageous to either party, but from the mercantilist view which inspired the whole contest a permanent advantage was given to the foreigners, who seem to have retained the industries inaugurated during the struggle.[2] The Low Countries were in a position to disorganize seriously the trade of England with a large part of Europe, for the Staple was at Middleburg. When the English plan was understood, that town at once began to put impediments in the way of the new company. For example, the new company had been authorized to transport a certain number of white cloths which it had been forced to buy up before the suspension of the old company had gone into effect.[3] Thereupon the burgesses of the mart town confiscated the goods, as the property of interlopers.[4] Somewhat later the Privy Council yielded to the pressure of the new company, and promised to remove the mart to some other town.[5] But the company did not continue its existence much longer. In 1617 the new company resigned its charter,[6] and the old company of Merchant Adventurers was restored to its former privileges.[7] The king acknowledged that "time had discovered many inabilities which could not at first be seen," and that "the grounds proposed by the undertakers of that work consisted more in hopes than in effects." Thus ignominiously ended what is justly regarded as the most ambitious attempt in the reign of James I, to "develop the resources of the realm and render it economically independent."[8]

[1] S. P. D. September 11, 1616; Gardiner, ii, p. 388; Unwin, pp. 190, 191; Durham, p. 218.

[2] Misselden, *Free Trade*, 1622, p. 41; Cunningham, ii, p. 233, n. 9.

[3] C. R. July 12, 1614.

[4] C. R. September 8, 1614. See Appendix N.

[5] C. R. September 18, 27, 1616.

[6] C. R. July 9, 1617.

[7] Soc. Ant. Proc. Coll. August 12, 1617.

[8] Cunningham, ii, p. 294.

CHAPTER IX

THE IRON INDUSTRY

WITHOUT the aid of monopolies officially conferred, iron-works had sprung up in Sussex, Surrey, and Kent in the southeast, and in the Forest of Dean.[1] The plants in these parts and elsewhere were estimated to number about eight hundred at the beginning of the seventeenth century.[2] Most of these industries were undertaken, as far as one can judge, by immigrants who brought with them continental methods. They smelted the iron near the sources of supply of iron ore and wood. Statutes and proclamations, as well as other contemporary evidence,[3] testify to the anxiety which was felt concerning the destruction of forests by the iron-furnaces. The rising price of fuel in London led to an act in 1581 [4] forbidding the erection of new iron-works within a radius of twenty-two miles of London or within fourteen miles of the Thames. There were other reasons for keen anxiety, for it was feared that the navy would be imperiled by the consumption of timber for industrial purposes. These fears may have been well founded; and there is good reason to think that severe measures were actually needed in order to preserve the forests, for the art of forestry was not understood, and the too rapid felling of trees would have brought grave inconveniences, if nothing worse. The problem was not how to establish a new industry in the country, but how to reconstitute one already established. The stimulus to experiment would have been strong, even without the hope of patents, for the ironmasters were feeling the need of a new and cheaper fuel.[5]

One patent [6] was taken out in Elizabeth's reign for the use of

[1] Hewins, *English Trade and Finance in the Seventeenth Century*, 1892, p. 12.

[2] Sturtevant, *Metallica*, 1612, p. 3 in ed. 1858. See Appendix S.

[3] Norden, *Surveyor's Dialogue*, 1607, p. 212.

[4] 23 Eliz. c. 5, sec. 3. See also 1 Eliz. c. 15; 27 Eliz. c. 19; 39 Eliz. c. 19.

[5] Compare the similar and simultaneous difficulties in the glass industry, above, pages 67 ff.

[6] Pat. 31 Eliz. pt. 8 (October 9, 1589), to Proctor and Peterson.

coal instead of charcoal in iron-smelting. But the patentees must have failed, for nothing is heard of any work undertaken by them. Another patent was asked [1] through the intercession of the Countess of Cumberland, but this project also failed to bear fruit. A similar project in 1607 received a patent but accomplished nothing.[2] The next project became famous, not because of its success, but because its inventor was an accomplished advertiser. This was the plan of Simon Sturtevant who in 1612 received a patent for thirty-one years. The grant included privileges for a great variety of furnaces, mills, and machines that he claimed to have perfected. He professed to explain them in a book [3] which he published at the time. This is often referred to as the first "patent specification," but it hardly deserves that title. Its partial resemblance to specifications is accidental, and the practice of formally revealing the exact nature of an invention did not become common till long afterward. Sturtevant's treatise, moreover, gave no really intelligible explanation of what was intended to be done. It might more appropriately be called the first "prospectus." In it the author set forth the many wonderful feats which he promised to accomplish. He was evidently bidding for investors. He expected to make £33,000, chiefly by smelting iron with sea-coal. At his suggestion, the grant distributed the ownership into thirty-three shares. Of these ten were reserved to the king, five for Prince Henry, two for the Duke of York, and one for Viscount Rochester. The remaining fifteen went to the patentee, who disposed of all but one share to capitalists.[4] Sturtevant's patent was revoked the next year on account of its failure. John Rolvenson received one [5] in his stead, which likewise came to nought.

The struggles of Dud Dudley to introduce the art of smelting with coal form one of the most interesting of the industrial romances of the period. The story of his efforts and of the opposition which he had to encounter sounds more like the episodes of the latter part of the eighteenth century than the first half of the seventeenth.

[1] Hist. MSS. Com. Rept. Cal. *Salisb. Papers*, v, p. 159, March, 1595.

[2] Pat. to Chauntrell and Astell, Docq. December, 1606; Grant Bk. January 30, 1607.

[3] *Treatise of Metallica*, 1612. See Appendix S. This gives text of the patent.

[4] *Ibid.* pp. 3–4, 6–12, in ed. of 1858. (Appendix S.)

[5] Rolvenson, *Treatise of Metallica*, 1613.

Dudley left a record of his trials, which is the chief source of information concerning the man who came nearer than any other of his century to succeeding in this task.[1] His efforts began in 1619, when he abruptly terminated a university career to undertake the management of his father's iron-works in Worcestershire. He immediately saw that there was a pressing need for a new fuel supply, as the neighboring wood was growing scant. He therefore endeavored to utilize the coal deposits that lay near at hand. He secured, through Lord Dudley, a patent[2] for his invention, without disclosing his secret. His patent was exempted by name in the Statute of Monopolies. His first reverse came early, his works being completely ruined by a flood. He restored the works, and claims to have succeeded in producing good iron by the new process, selling at £4 instead of the usual price, £7, for pig iron; and £12 instead of £15 and £18 for bars. His own evidence is confirmed by the jealousy of his rivals, who in Worcestershire, and in two places in Staffordshire, successively, ejected him by violence, destroyed his tools, and troubled him with litigation.[3]

Up to this point his privileges from the crown had been ample, and his lack of success was due to the fact that he was not adequately protected in the exploitation of them. But he was not altogether free from difficulties with government, for there were others who were seeking like privileges. Chief among these was one Sir Philibert Vernatti, of Dutch extraction, who petitioned for a patent. Dudley's partners objected that this would be an infringement of their patent. As might have been expected, it was the Privy Council that assumed to judge the matter. The difficulty was that, Dudley's process being secret, it was impossible to decide as to whether his methods were being employed by Vernatti. The Council ordered[4] that both parties should deposit with the clerk of the Privy Council sealed explanations of their respective inventions. Two years later Dudley's partners petitioned against Vernatti's patent, which they claimed was being used only to trouble them. The Council ordered Vernatti to appear before them, but he de-

[1] Dudley, *Metallum Martis, or Iron made with Pit-coal, Sea-coal, etc.* 1665.
[2] Text of the patent in Appendix T.
[3] *Metallum Martis*, ed. of 1858, pp. 62–67.
[4] C. R. April 6, 1636.

faulted and the patent was nullified.[1] Dudley secured a re-issue of his patent [2] in 1638, in the face of strong opposition. He had no favorable opportunity for prosecuting his undertakings during the dozen years of disorder that followed.[3] Once more, in 1651, Dudley tried to set up an iron-furnace, this time near Bristol, but was again disappointed.[4] He spent £700, then quarreled with his partners, and his royalist record was used against him in legal actions. His ambition was finally checked at the Restoration, when he was refused a new patent for which he applied.[5]

Dudley admitted that he was never able to produce large quantities of iron by the use of sea-coal, but claimed that this was due to the inadequacy of his plants, and that he could produce iron that was better and cheaper than the charcoal iron. But his secrets died with him,[6] and it was not until 1738 that the use of coal in the smelting of iron was successfully undertaken.[7] Dudley's experiments, while interesting, can lead us to no positive conclusions concerning the results of the patent system. He certainly was anxious for patents, and at the Restoration the failure to secure a privilege discouraged him from proceeding further. On the other hand, before his rather unusual disappointments he would probably have undertaken as much without a patent as with it. While he entertained hopes of success, the conditions at large were amply sufficient to induce him to introduce desirable changes. There was no reason, however, why he was not justly entitled to the added encouragement of a patent duly limited. But the "consideration," which is so important in modern grants, was wanting. He did not receive patents in return for revealing his secrets, and whether his

[1] *Metallum Martis*, p. 64.

[2] Pat. 14 Car. I, pt. 43 (May 2, 1638). Appendix U.

[3] *Metallum Martis*, pp. 64, 65.

[4] Similar undertakings enjoyed two of the few patents granted during the Interregnum. Jeremy Buck had his patent sanctioned by Parliament. He made three attempts but failed. In 1647, Cromwell granted a patent to Capt. John Copley who sunk several hundred pounds to no purpose. Dudley was invited to inspect the plant and condemned it. *Metallum Martis*, p. 66.

[5] *Metallum Martis*, pp. 64–66.

[6] Powle's *Account of the Iron Works of the Forest of Dean*, Phil. Trans. 1677, pp. 931–936, and Yarranton's *England's Improvement by Land and Sea*, 1681, pt. ii, pp. 159–169, show that, after Dudley, charcoal rather than coke was being used.

[7] See Dict. Nat. Biog. article Darby (Abram).

privileges were useless to him, or prejudicial to the country at large, cannot be determined, because these patents were not enjoyed under normal conditions. After serious difficulties in establishing his new undertaking, it was suddenly paralyzed by the Civil War.

The problem which the ironmasters had to solve, when they tried to employ coal in smelting, was to discover a means of cheaply reducing the coal to a satisfactory fusing agent. Two solutions were possible, and apparently both methods were tried. Either the coal must be refined, or an unusually hot blast must be applied. Most of the experiments of the period seem to have been with the former method. Dudley apparently used both in combination. Nothing was accomplished in the direction of obtaining a blast giving sufficient heat to make the unrefined coal useful, and it is impossible to determine whether the refining of coal was successful enough to make it really suitable for smelting purposes. The production of some sort of coke was seen to be necessary, but this task was as difficult as that of using the coke after it was prepared. The successful production of coke at a later day seems to have owed nothing to the experiments of this time. Whether or not anything like the later process of coking was in use, it is impossible to decide, for the processes were kept secret. The apparent failure to produce a satisfactory article may or may not have been entirely due to the improper way in which the coke was employed. Certainly there was no lack of experiments. The number of patents was out of all proportion to the results.[1]

[1] Out of a total of 103 patents for invention between the years 1620 and 1640 there were 23 for furnaces, ovens, smelting, and refining. See Specifications of Patents for Inventions.

CHAPTER X

THE SALT MONOPOLIES

It now remains to consider in detail some of the experiments with monopolies created after the passage of the act of 1624. In a study of the industrial results of the system, the shortness of the period which remained before the Long Parliament and its radical measures, renders the history of most of these monopolies less significant than that of the privileges which originated in the reigns of Elizabeth and James I. But in at least two instances under Charles I rigid monopolies were conferred in articles of such inelastic demand, and the measures of enforcement were so vigorous that the few years of Personal Government were sufficient to establish the new corporations upon as strong a foundation as any of the previous privileges had enjoyed. The soap corporations will be discussed in the next chapter. In this the salt monopolies will be considered.

Salt evaporation had been carried on, upon the east coast, probably before the reign of Elizabeth, but this industry had never been important, and had been entirely given over by reason of foreign competition, — Scottish, French, and Spanish salt being better and cheaper.[1] In the early part of the reign of Elizabeth several patents were issued for new inventions in the manufacture of salt.[2] But during the last fifteen years of that reign Thomas Wilkes enjoyed a monopoly of the salt trade of the east coast.[3] Complaints of injury to trade and shipping were sent in immediately thereafter from the eastern ports.[4] It was this monopoly which was the chief grievance in the Parliament of 1601, at which time it was claimed that Wilkes and his deputy had raised the price

[1] Lansd. 47, nos. 67, 68.

[2] Page, *Denizations*, p. xlix; Hulme, L. Q. R. April, 1896, p. 149; January, 1900, p. 47.

[3] Pat. 27 Eliz. pt. 6 (September 1, 1585); Pat. 28 Eliz. pt. 5 (February 20, 1586).

[4] C. R. March 22, 1587; Lansd. 47, nos. 67, 68, 69; Lansd. 52, no. 20.

of salt from 14d. to as many shillings per bushel.[1] The iniquities of the patent were acknowledged by the queen after the debate on monopolies, and in her subsequent proclamation it was especially revoked without trial at law, being found abusive both in matter and in execution.[2] The next monarch did not revive any such patent,[3] and it was left for his successor to create a new monopoly, with far greater privileges, under company organization.

Early in Charles's reign an agitation was commenced for a new monopoly similar to the one Wilkes had had. The circumstances under which the scheme originated may be briefly recounted. Salt being a commodity in which cost of carriage represented a large proportion of the price, the supply was drawn from the numerous sources which could most conveniently supply the demands of different localities. Spain, France, and Scotland exported salt into England. Some was prepared at home, but this was relatively small in amount and not cheap or good. England, France, and Spain then became involved in warfare, and supplies of salt were difficult to obtain, especially after the English destroyed the salt-works on the Isle of Ré, and the French those at Rochelle. To guard their supply, the French prohibited the exportation of salt, and the consequent drain upon the Spanish supply led to a similar edict there. Finally, in 1630 a proclamation was issued by Charles forbidding the export of English salt, a not very necessary measure.[4] When the occasion was removed, the French and Spanish edicts were suspended and salt became cheap again in England, costing £3 or £3 10s. per wey [5] for English and French salt, and £4 for Spanish. The revival of foreign competition had a natural result, and the English salt-makers, to protect the prosperity they had enjoyed during the war, proposed a tax on imported salt.

The form which protection ultimately took was the creation of a close monopoly for a group of men who, it was claimed, knew nothing of the salt business, but who were ready to share their profits liberally with the king. A proposal was submitted by these

[1] D'Ewes, p. 647. [2] See Appendix J.

[3] For several patents for new processes, see Ordish, Antiquary, July, 1885.

[4] Davies, *Answer to Printed Papers by the late Patentees*, 1641, pp. 2 ff.

[5] At London a wey = 40 bu., a bu. = 10 gal. The measure differed at each port.

projectors for the monopoly of salt, asking to be incorporated, with the exclusive privilege of supplying all the salt for the east coast from Southampton to Newcastle. They were to exclude continental salt and to make an agreement with the Scottish producers. An imposition of 10s. per wey was to be paid to the king, the petitioners undertaking to sell at £4 or £5 per London wey.[1] The Privy Council approved the petition, and at once set down elaborate provisions for the indentures, and wrote to the Scottish salt-makers ordering them to join the new company or to lease their salt-pans to it, for "it is necessary that a work of this nature should be under one rule and government, lest being distracted the whole might run into confusion." Early in 1636, accordingly, a charter of incorporation was granted to the Company of Salt-Makers of South and North Shields.[2] Acting under authority, they appropriated all the works and pans of the Tynemouth. Thereafter the eastern prices were from £4 15s. to £6, while west of Southampton the price remained at £3 and less.[3] During the first year of operations the eastern fishing towns experienced great hardships from the dearth of salt. The Privy Council was obliged to pass[4] special orders of relief. Not only were the subjects injured, but the consequences of the patent were visited upon the king, and the Council recorded "that now since foreign salt has been prohibited, there hath not been enough brought into the port of London by the English and Scottish corporations to furnish the city of London and to supply his Majesty's occasions and expenses in household as heretofore." [5]

In the charter of the company there had been a saving clause to protect the undertaking of Nicholas Murford, who had previously obtained a patent for a new invention in salt preparation.[6] Differences now arose between him and the company with regard to the duty upon Scottish salt.[7] The difficulty was adjusted the more easily because internal dissensions had been stirred up in the company; and this was made the occasion for resigning their

[1] C. R. February 22, 1635.
[2] Docq. January, 1636.
[3] Davies, pp. 6, 7.
[4] C. R. November 13, 1636; May 30, November 27, 1637; December 19, 1638.
[5] C. R. May 9, 1637.
[6] Docq. November, 1632.
[7] C. R. July 15, 1638.

patent, as the majority were weary of the opposition which the monopoly was encountering, and perhaps of the policy of the managers. The salt-makers of Shields resumed their pans, and thereafter, for a time, English and Scottish salt was sold in London at £3.[1] Almost at once, however, it was planned to transfer the monopoly privileges to Murford.[2] But during the negotiations Thomas Horth, who had been a chief projector of the old patent, together with those of his associates who still desired to remain in the business, made an application for a new incorporation. The Privy Council then held a meeting to consider the rival propositions as well as the protests of the fishing towns against any monopoly.[3] It was voted to refer the subject to the lord treasurer and Lord Cottington, who reported in favor of Horth's proposition,[4] on the ground that the latter promised a fixed price, and because he depended upon fire rather than evaporation in preparing the salt. A day of hearing was then given to opponents of the project.[5] The Cinque Ports, Southampton, Poole, Weymouth, Melcomb Regis, and Yarmouth, as well as London, sent representatives to protest, but their objections were promptly disposed of. "His Majesty and the Board conceiving it to be a matter of great advantage to the kingdom that salt made within his Majesty's dominions should be preferred and used before any foreign salt, and finding upon debate that salt made in his Majesty's dominions is sufficient for all uses, did therefore order that the said business be forthwith established." [6]

In January of the next year Horth and his associates received a new patent,[7] which was supported during that year by numerous warrants of assistance, summonses, and imprisonments by order of the Council.[8] Nicholas Murford was one of those imprisoned for "animating others with their refractoriness and obstinacy,"

[1] Davies, p. 7.

[2] S. P. D. C. I, cccviii, nos. 8 and 9. The calendar assigns an incorrect date.

[3] July 29, 1638. From *A True Remonstrance of the State of the Salt Business*, London, 1641. In Brit. Mus. volume of tracts collected under the title *Petitions and Remonstrances*, etc., 1638–75, fol. 221. (George III, Library.) Also in Soc. Ant. Coll. Broadsides.

[4] *True Remonstrance*, date of August, 1638.

[5] C. R. December 5, 1638.

[6] *True Remonstrance*, date of December 19, 1638.

[7] Davies, p. 7.

[8] C. R. Charles I, xvi, 211, 497, 595, 668; xvii, pt. i, 197, 198.

and direction was given that Murford's work should now cease altogether.[1] But Horth soon found himself in trouble. John Duke, farmer of the customs on salt, and a partner in the Salt Company, complained to the Council that Horth concealed from his partners the accounts and reckonings and all knowledge of its transactions; that he removed officers without the consent of his partners; that he admitted foreign salt upon arbitrary terms for his own benefit; and that he had paid no rent to the king.[2] As a result of an investigation, extents were sued out for the payment of the rent due.[3] The second Shields salt patent was issued only a very short time before the proclamation recalling numerous patents and commissions, which was a measure taken by the Privy Council in anticipation of the meeting of Parliament. That proclamation, while it accomplished or announced the sweeping away of a large number of aggravating patents, did not involve those for soap and salt. But the salt patent did not long survive, for the Long Parliament called in the patent and thereafter the trade was free to all.[4]

The evidence as to the effect of the Shields monopoly rests mainly upon the petition of the company[5] and the reply to it.[6] On behalf of the patentees it was claimed that at all times a sufficient quantity had been provided, and at low prices. It was charged that the "engrossers, forestallers, and regrators" of London, since the surrender of the patent, had sold at prices higher than those of the patentees. The retailers, refiners, and "some western merchants trading to Newfoundland" were said to be the chief opponents of "this native manufacture, which all other provinces and states do so much cherish when they can erect any native manufacture within their own principalities to give employment to their own natives, that they prohibit the importation of any such commodity upon confiscation of ship and goods." Their answer to the charge of monopoly was that the charter was subject to revocation by king or Council if found inconvenient, "it debars no man from making that formerly had any works,[7] no

[1] C. R. December 13, 1639.
[2] C. R. February 29, 1640.
[3] C. R. April 12, 1640.
[4] November, 1640. See Davies, p. 17.
[5] *True Remonstrance.*
[6] Davies.
[7] This was not exactly true, for the Council interfered with Independent producers.

man from erecting of new works, only requires them to be of the corporation and to pay the duty imposed by his Majesty and to serve the subject at the rates agreed on.[1] If a monopoly be a sole vendition, the society are not the sole venders, for all salt retailers [2] are free to come and buy at the works." [3] The reply to this petition was written, not by a salt merchant, but by a fish merchant, who may be presumed fairly to represent the consumers, and his evidence is less subject to suspicion. The moderate price of salt in London in 1639 was explained as due to the Scottish invasion, as a result of which salt from Scotland was put on the London market at such a low rate as to defeat the purposes of the patentees, who demanded nearly twice the market price. But in September, October, and November, 1640, just before Parliament called for the patent, the price was raised to £6 and £8. After the intervention of Parliament, the price again dropped to £3.[4]

The ambition to develop the native manufacture of salt by means of monopoly and of prohibition of import resulted only in disappointment. Between the years 1640 and 1660 the salt-works

[1] Those who were already producing at Newcastle and in Scotland were involuntarily drawn into the company.

[2] The company did not have any monopoly of the retail trade, but it had the exclusive right to supply at wholesale in all eastern ports. It controlled importation as well as manufacture. The independent producers were apparently engaged in refining rather than evaporating. The company was preparing to exclude the independent producers from this also.

[3] Notice also this defense of the salt monopoly, which attempts to show the importance of independence of foreign nations: "If possibly it may be compassed and made in England to be offered hereafter when brought to full perfection at the same or somewhat a higher price, than we used to be served from abroad, questionless it will be good policy rather than expect it from others who will deny it us in greatest need, and we found both unskillful and unprovided of most of the materials to furnish us therewith. . . . And besides making it ourselves we shall not only have it at a constant price, which before did much vary, rising and falling as more or less store came from abroad, which was so much the more hazardous in regard many ships brought it only when they could get no other employment." Robinson, *England's Safety in Trade's Increase*, London, 1641, p. 19.

[4] At Cambridge, according to Rogers's figures, *Agric. and Prices*, vi, pp. 408, 409, the usual price of salt was 13s. 4d. per quarter from 1630 to 1635. In the following years, the prices were: 1635, 16s.; 1636, 19s.; 1637, 18s. 8d.; 1638, 18s. 8d.; 1639, 14s. 8d. and 19s. 10d.; 1640, 27s. 4d., later 16s.; 1641, 13s. to 16s. 2d. For Oxford, Rogers notes occasional purchases "at unheard of rates, at from 40s. to 50s. the quarter." (v, p. 434.)

at Shields were dependent entirely upon protective duties for their successful competition with Scottish producers. Whenever the latter were put on equal terms, the industry at Shields languished. During the Union of the two countries under the Protector, the industry was completely ruined.[1] The salt industry was not carried on successfully in England until after the discovery, in 1670, of rock salt at Droitwich.[2]

[1] Lansd. 253, no. 17. Reproduced in Richardson's *Reprints*, vol. iii. It is there incorrectly cited as Lansd. 258.

[2] See Cunningham, ii, p. 310.

CHAPTER XI

THE SOAP CORPORATIONS

As has already been indicated, the inception of the soap project was formed toward the end of the reign of James I.[1] Sir John Bourchier's protégées, Jones and Palmer, received a patent for hard soap, including the right to search all soap-houses to prevent infringement of their privilege.[2] After this was granted, there was a correspondence of several months with the government of the city of London. Secretary Conway wrote to the lord mayor of the invention, which would result in "saving many thousands yearly to the kingdom, to the increase of the stock of the kingdom and furthering the balance of trade." [3] But as the soap-boilers objected to it, a public trial was ordered.[4] The aldermen appointed a committee,[5] which reported the result of the trial, expressing some doubt whether the soap was made wholly of English materials: "With much labor it will wash coarse linen (if it be used by skillful washers acquainted therewith) as well as the best sort of ordinary soap used, but far less sweet and merchantable, and it is not fit for fine linen, as it destroys the cloth." [6] Little was done to exploit the privilege until 1631, when it was confirmed[7] and a company was incorporated for the purpose of buying up and working the patent.[8] The new society, known as the Company of Soapmakers of Westminster, undertook to work the new invention

[1] See above, pages 93, 94.

[2] Pats. 20 Jac. I, pt. 12, no. 10; 21 Jac. I, pt. 5, no. 2 (February 23, 1623). Appendix W.

[3] Rem. March 30, 1624. The phrase "balance of trade" had just been popularized at this time. See my article in the Quart. Jour. Econ., November, 1905, on this subject.

[4] Rep. April 6, 1624.

[5] Rem. April, 1624. (See Anal. Index, vi, p. 38.)

[6] Rem. May 2, 1624.

[7] Pat. 7 Car. I, pt. 10 (December 17, 1631). To Jones *et al.*

[8] Patent January 20, 1632.

and to produce 5000 tons of soap yearly, paying to the king £4 per ton or £20,000 per annum. Tallow and ashes were no longer to be exported nor potash imported, but the company's exclusive privilege was still only the searching and testing of soap.[1] The latter privilege, however, soon proved to be a powerful weapon against independent producers. The company's rights were made more valuable by a proclamation [2] which forbade the importation of soap or potash, and all domestic soap was to be made only with vegetable oil. This was a test that none of the independent soap-boilers could stand, and it did not much matter whether or not the members of the company confined themselves to rape and olive oils, because the searching was in their own hands.

Shortly afterward an information was exhibited [3] in Star Chamber against Overman and fifteen others of London for unlawful assembly, for infringing the patent of the Westminster Company, for contempt of proclamations, for using fish-oil, refusing the assay, and conspiring to raise prices. After some litigation, the Star Chamber decreed [4] that the offenders should be committed to the Fleet during the king's pleasure, disabled to trade in future, and fined in sums ranging from £500 to £1500 each. They remained in prison till February and April in the next year, before which time two had died in restraint. The fines were not mitigated nor suspended, as was usual, but measures were taken for collection,[5] and a general order was set down in Star Chamber, aiming to inspire greater fear. This decree amplified the preceding regulations, directing that no new masters should undertake to work without consent of the Star Chamber, that no soap should be made outside of a one-mile radius of London, Westminster, and Bristol, and that all soap-making should be under the rule and government of the company.[6] The Council, in order to raise the reputation of the new soap, ordered another trial in the city before the lord mayor,[7] who after a public test certified in more favorable

[1] Pat. Rolls, Indenture 8 Car. I, pt. 5 (May 3, 1632).
[2] Soc. Ant. Proc. Coll. June 28, 1632.
[3] November 22, 1632. *Short and True Relation of the Soap Business*, p. 7.
[4] May 10, 1633. *Relation*, pp. 7–10; Rushworth, ii, pt. ii, app. pp. 54, 55.
[5] August 23, 1633. *Relation*, p. 11.
[6] Rushworth, ii, pt. ii, app. pp. 60–62, 109–115.
[7] C. R. December 6, 1633.

terms than his predecessor had done,[1] and a fresh proclamation was issued, reciting the mayor's certificate, "by which it appeareth that the soap made by the society is good, sweet, and serviceable for our people." [2] Strict command was given for the observance of all orders and decrees in this business. Independent soap-boilers continued to be dealt with. Some who had been imprisoned were now released upon making submission, and by giving bonds were freed from the payment of further fines.[3] Some attempted to test the character of the monopoly by claiming admission into the company, on the ground that they had served the full seven years' apprenticeship and were now duly qualified as masters. But the refusal of the company to admit them demonstrated the really exclusive nature of the company.[4]

A new proclamation was then issued which took cognizance of the rising price of soap, and commissions were constituted to "rectify" prices and to search for offenders. The corporation was to receive the benefit of fines collected from delinquents. The attorney-general was charged to proceed in Star Chamber against obstinate offenders. A general prohibition was laid upon all manufacture of soap in private houses, even for private uses. Finally, the Westminster Company was exempted from the general prohibition against the use of fish-oil, and was allowed to make soap by the old method with this kind of oil, for the use of dyers, wool-combers, and others who specially objected to the new soap.[5] Orders in Council were also set down to restrain importation, and blank warrants were entrusted to the company for use against any offenders.[6] The next proclamation,[7] while renewing the former regulations, added one which showed how devoid of value were the nominal privileges of the independent soap-boilers, for all grocers, salters, chandlers, and other retailers were forbidden to buy or sell any soap except that procured from the corporation. Shortly after this, the privi-

[1] C. R. December 29, 1633. See also Gardiner, viii, p. 73. *Cf.* above, page 119.

[2] Soc. Ant. Proc. Coll. January 26, 1634.

[3] *Relation*, p. 15. See also C. R. 1633–4 and 1634–5 (ix, 426, 428, 462, 501, 532, 550, 607, 635, 637; x, 116, 122, 133–144, 279, 296, 314, 315).

[4] *Relation*, p. 16.

[5] Soc. Ant. Proc. Coll. July 13, 1634.

[6] *Relation*, p. 19, September 29, 1634.

[7] Soc. Ant. Proc. Coll. January 20, 1635.

leges of the company were still further strengthened by a new covenant,[1] according to the terms of which they agreed to make 5000 tons annually, confined to three houses. They were to operate a joint stock, paying the king £6 per ton. In return for the higher profit to the king, they were to be allowed to charge a higher price for their soap.

The difficulty of preventing violation of this very unpopular monopoly was such that the company and the Privy Council were at length constrained officially to recognize infringements, and a commission was issued to certain nominees of the Westminster Company to compound with offenders.[2] The hostility of local authorities was so great that enforcement could not be entrusted to the ordinary magistrates. The soap monopoly well illustrates the devices by which Charles attempted to overcome the long-standing difficulty of securing an effective local administration of the government's unpopular measures. Not only were commissions frequently resorted to, but an attempt seems to have been made to develop an entirely dependent staff of officers, subject to crown command. The messengers of the Chamber answered this want, and they were used with increasing frequency.[3] This policy was of course calculated to intensify local bitterness against the "popish soap."[4]

It was at this time, however, that politics within the king's court were undergoing a change. Hitherto, notwithstanding the fact that the company had not fulfilled its obligations to the Treasury and that it had failed even to satisfy its own objects, it had been protected and upheld through the influence of its patron, Sir Richard Weston, who had become lord treasurer and Earl of Portland. This was also in the face of the opposition of Archbishop Laud and his faction. After Portland died, Laud was still unsuccessful, partly through poor tactics, in overthrowing the Westminster Company.[5] The independent soap-boilers offered far better terms for the privilege of resuming their occupation, and for the revocation

[1] *Relation*, p. 23, April 12, 1636.

[2] S. P. D. December 18, 1636; *Relation*, p. 24.

[3] See C. R. June 16, 1637; S. P. D. July, 1637.

[4] The popular antagonism to the Westminster Company as a Catholic institution was understood by an Italian then resident in England. See Penzarii's letter ($\frac{\text{January } 30}{\text{February } 9}$), 1635, quoted by Gardiner, viii, p. 74, note, from the R. O. Transcripts.

[5] Gardiner, viii, pp. 71 ff, 284.

of the Westminster charter,[1] but without success. Cottington, who represented Portland's policy, was too powerful. But in 1637 Laud succeeded through the friendship of Juxon, the new lord treasurer. Laud's protégées, the independent London soap-boilers, were incorporated [2] on agreement to buy out the Westminster Company for £43,000 and promising £8 per ton to the king, or double the amount originally promised by the Westminster Company, and £2 per ton more than that which had been recently promised [3] in order to check Laud's scheme.

This ended the career of the Westminster Company. Whatever may be said in justification of other monopolies of the period, opinion is unanimous in condemning this one.[4] Workmen and masters had been forced out of their accustomed employment, and prices had been raised very high,[5] notwithstanding regulations. As far as the government could succeed in its high-handed course, the company was able to dominate the whole trade at will. In spite of protestations to the contrary, the company was clearly in possession of a monopoly in every reasonable sense of the word. The organization as a company was a mere subterfuge to evade the Statute of Monopolies. It mattered little to tradesmen or the public whether the monopoly was conferred by a single charter or patent, or whether it was conferred by successive measures which in their sum created a monopoly. Monopoly was not written in the charter, but with importation prohibited, as well as the exportation of raw materials, with absolute and unrestricted right of search and assay vested in the discretion of the company, with the prohibition to all others to use important raw materials, — which the company might freely use, — and the requirement that middlemen should deal in no soap but that of the company, no more rigid monopoly could have been asked or desired.

[1] Laud to Wentworth, June 12, 1635: Laud's Works, viii, p. 138.

[2] Patents, May 22, 1637, July 3, 1637.

[3] See above, page 122.

[4] See Cunningham (ii, p. 307), who usually views the monopoly policy sympathetically.

[5] Prices were raised on numerous occasions. According to the Westminster Company's last covenant, they sold soft soap at £3 14s. 8d. per bbl. which had been sold before the monopoly at 50s. or 54s. for what was claimed to be of better quality. "Crown" soap, the company's specialty, was sold at £4 16s. per bbl. instead of £3 4s. or £3 6s. See *Relation*, p. 23.

When after 1639 popular indignation against monopolies found free expression, the soap proceedings shared with those of wine and salt in encountering the bitterest condemnation. In return for the hardships entailed by the monopolies, little good of any sort resulted. The company did not appear to prosper,[1] and the king received little or nothing till its affairs were wound up.[2] Then he probably cleared something, but this came out of the new company and was a charge upon future earnings, or prices to consumers. The monopolists, however, must really have gained a large amount notwithstanding their difficulties. They were obliged to pay nothing for their privileges in cash, and their rents to the king based upon sales appear not to have been paid. Yet the monopoly of the industry, even if not strictly enforced, must have been worth something to them. Finally they received £43,000 to resign an undertaking to which they had contributed nothing except possibly the patented inventions, which they do not seem to have resigned or made public. The £43,000 was paid for "good-will" purely, for the new London Company had to pay £20,050 for the plant and materials.[3] From the £43,000 should be deducted £8000 paid to the king,[4] £6000 for law-suits,[5] leaving nearly £30,000 clear profit [6] in addition to whatever gains may have arisen between 1632 and 1637 by a monopoly of so essential a commodity.

For the profits of the company, whatever they were, it is safe to say that the consumers paid every farthing, since the new company, consisting of the old soap-makers, succeeded in maintaining its power for a long time. It is not surprising to find that the old soap-makers who had to pay so dearly for their restoration to their trade should have been very insistent upon the new privileges conferred upon them, and it was only natural that they should shift the expense of the transaction upon the community. At all

[1] S. P. D. September 29, 1634.
[2] S. P. D. June 21, 1637.
[3] *Relation*, p. 25.
[4] S. P. D. June 21, 1637.
[5] The company's own estimate, *Relation*, p. 26.
[6] A few thousand of this went to Portland directly, in the form of bribes. See Gardiner, viii, p. 76; Laud's Works, vii, p. 155. Whether the entire amount of £43,000 was ever received may be questioned. In 1641, the House of Commons passed a resolution nullifying the contract. C. J. October 30, 1641. But in 1656 the payment of the entire sum was used as an argument on behalf of the London Company. See below, page 127.

events, they were soon engaged in as severe and uncompromising a policy as their predecessors.[1] And the peculiar conditions upon which their rights rested rendered the new company exceptionally fortunate in the succeeding years. The protégées of Laud, the original soap-makers who had been struggling against the Westminster Company, were incorporated as a fully organized society with a monopoly of engaging in the industry and taking apprentices. The king had every reason to support the new company with even more vigor than the old. He proved his zeal by a fresh proclamation[2] announcing the new company, reciting the terms of the agreement, and exhorting obedience. Everything that effort could accomplish was done by the Privy Council to prevent illicit manufacture.[3] The London Company was spared from the revocation of monopolies in 1639,[4] and in the next year the king prepared to authorize the company to sell at whatever prices they chose, and even suspended their obligations to him.[5] But by this time the power had passed to Parliament, then sitting.

The London Company was as successful in obtaining recognition under the Long Parliament and the Protectorate, as under Charles. There was constant and even violent opposition, but the privileges were not recalled. How steadily and thoroughly they were protected, it would not be safe to say from the evidence at hand, but there is no doubt that the privileges were important enough to make the illicit producers insecure in their position. Several explanations may be given for the survival of this monopoly. In the first place, its character was moderately democratic, since theoretically its rights were granted not to a few intruders in the industry, but to the mass of actual workers who had exercised the trade originally in London, as also in Bristol and in York, for the company was operating in the two latter places by 1640.[6] A second explanation discloses the possible operation of a weightier motive. The importance of the company may have been due to

[1] Gardiner, viii, p. 284.

[2] Soc. Ant. Proc. Coll. December 28, 1637.

[3] See C. R. xiv–xix, 1637–1640, indices, article "soap." See also S. P. D. September, December 31, 1639; May 13, June 17, September 23, October 14, 1640. See also Cal. S. P. D. indices, 1636–7 and 1637, art. "Soapmakers, unauthorized."

[4] See Appendices Q. and R.

[5] S. P. D. November 1, 1640.

[6] S. P. D. March 30, 1640.

the fact that it facilitated the collection of the excise. Soap was excised in 1643,[1] and there was also a tax upon the raw materials. The temptation to evade taxation was strong, for unexcised soap could be sold at a high profit. In 1650 the authorized soap-boilers complained [2] of the "double excise," which, they said, tempted men to manufacture in "dark places," thus subjecting the company to an unfair competition "by reason of the visibility and fixity of their houses." Under these circumstances there must have been a strong public motive for concentrating the industry and supervising it, and the company would offer the obvious means to this end. Soon after the meeting of the Long Parliament the patents for soap were referred to the consideration of a committee.[3] When the report was read, it appeared that it was only the defunct Westminster Company that was called in question. The House of Commons resolved [4] against the invention of Palmer and Jones as a deceitful project, against the patents of incorporation and the indentures and covenants of the company, against the proclamations and decrees in support of that monopoly, against the Star Chamber and Privy Council proceedings, and against the projectors of the company and the referees, declaring that they should make reparation to the London soap-boilers and to the Commonwealth. The proceedings against the members of the Westminster Company dragged through many years, but the ordinance finally prepared against them was lost by committing.[5]

The London Company fared well in the courts. When the legislature failed to revoke the charter arbitrarily, the independent soap-boilers appealed to the law, invoking the Statute of Monopolies against the London Company, which "to their utter ruin" broke their houses, seized their materials and vessels, imprisoned them, and drove them into exile. But the company had a long purse and fought the case for fifteen years, and finally won it. The company resorted to all sorts of expedients to delay judgment,

[1] Husband, *Orders and Ordinances*, 1642–46, London, 1646, p. 315.

[2] Lilburne *et al.*, *The Soapmakers' Complaint for the Loss of their Trade*, 1650. ("Proposals for a more juster, equaller, and righteous way" of raising Revenue.) King's Pamphlets, British Museum.

[3] C. J. December 21, 1640.

[4] C. J. August 17, 1641, October 30, 1641.

[5] C. J. December 14, 1647, May 29, 1651.

apparently fearing the result. Special verdicts, long pleas,[1] writs of error, appeals, and injunctions were employed, and the Long Parliament itself was induced to lend its authority, through commissioners of inquiry, to delay proceedings.[2] Finally, the case was decided in the Court of Exchequer in 1656. The report recites that the king, by patent, May 22, 1637, for preventing and reforming abuses in the trade of soap-making, and for the better government of that trade, constituted a society or body corporate of soap-makers to continue forever with power to search, and with exclusive right of apprenticing, paying £43,000 for the charter besides an impost upon soap. The question was "whether this was a good charter of incorporation or a monopoly within the statute of 21 Jac. I, c. 3." The judge's decision was as follows:

"I know very well that common and vulgar judgments run high against all such patents and condemn them before they understand them, as being contrary to the liberty of the subject and the freedom of trade; but they that consider them better are not so hasty in their censures; for certainly upon a serious consideration, all such patents and by-laws as tend most to the well regulating and ordering of trades and the better management of them, so that the benefits of them may be derived to the greater part of the people, though with a prejudice to some particular persons, have always been allowed by the law, but patents which tend to the engrossing of trade, merchandise, and manufacture, though never so small value, into one or a few hands only, have always been held unreasonable and unwarrantable." . . . "Wherefore he concluded that the grant was good." [3] A further appeal was attempted, but was stopped by order of Parliament in the next year.[4]

The continuance of this monopoly shows that some even of the most questionable privileges might thrive as well under the Commonwealth as under the monarchy. This period was not a speculative one, so that there were few projects ventilated, and fewer patents issued. And though administration under the Common-

[1] There was, for example, one of 336 folios.

[2] S. P. D. [August 23], 1653.

[3] John Hayes *et al.* London Company of Soap-makers) *v.* Edward Harding *et al.*, by English Bill, pp. 53–56, in Hardres's *Reports of Cases adjudged in the Court of Exchequer in the Years* 1655–1660, London, 1693.

[4] C. J. June 26, 1657.

wealth was not free from corruption, those highest in authority were honest and capable, as had not always been the case during the two preceding reigns. But while the abusive and scandalous monopolies were suppressed, some few others, for reasons of state policy or finance, were allowed to stand. Moreover, although the parliamentary leaders had sounder economic ideas than had the crown ministers, they still retained an attachment for many of the traditional restrictions upon industry.

CHAPTER XII

CONCLUSION

The period from the middle of the sixteenth to the middle of the seventeenth century was a time when social forces at home combined with the protestant diaspora abroad to produce a diversification and increase in mechanical pursuits unprecedented in England. There was great eagerness to renew old resources and to exploit new ones. The "projecting" spirit gave birth to some monstrous and artificial schemes, it is true, but the spirit itself was in consonance with the economic conditions. Capital was accumulating and seeking new avenues of investment, contributing, with the influx of capital from abroad, to reduce the rate of interest. The skilled labor of the protestant refugees, invited by the hospitable English government, was migrating from the regions of the then highest attainments in the arts. But this hundred years of economic transition did not bring to completion the national organization of trade and industry. Local interests were offering a vigorous resistance to the spread of the national economy, and the apparent uncertainty of the struggle enhances the interest of the period. Industrial progress was breaking down the old institutions; the arrangements which were supplanting them were as yet imperfectly organized and adjusted to their function.

At such a time much depended upon the good judgment of those in authority. Government alone could give security to property, and free scope for private initiative. Security, the administration certainly gave to the full measure of its inadequate resources. Government, indeed, undertook too much rather than too little. The effort was made to build up, under royal patronage, a group of industries for which England was as yet unprepared. The drift toward diversified manufactures, and the atmosphere of speculation which the rapid accumulations of the middle classes had inspired, led to ambitions that were premature; and these ambitions the government supported. But while security for national economic

progress was safeguarded, independent enterprise was discouraged by a reactionary policy, which entrusted to monopolists the fate of numerous new industries. The grant of monopoly sometimes included a prohibition of importation; in other cases, foreign products were subsequently excluded. Something might have been hoped for an industry which enjoyed the exclusive right of competing with imported wares, and more might have been hoped in some instances, perhaps, from competing domestic producers who were protected from foreign competition. But to invest a single concern with complete protection both as against foreign and as against domestic competition was altogether too likely to result in stagnation. Under such conditions the removal of all stimulus of competition was almost certain to tempt the single producer to incur no risk in the attempt to create new demands, or in the introduction of radical improvements in production. The protective measures, instead of being used as stepping-stones to progress and expansion, were treated as substitutes for enterprise and initiative. The market provided by the government's policy was sufficient to content the favored producers. When, ultimately, the protected industries had to face the competition of rivals at home and abroad, they lacked perseverance, vigilance, and aggressiveness, and languished in consequence.

Since the movement toward a wider economic freedom was steadily though only slowly predominating, the reactionary monopoly policy could not command public sympathy. And because the system was unpopular, its supervision was necessarily unsatisfactory. The law courts could not be resorted to, for they reflected the growing feeling against restraint. Hence the patentees sought their remedies before the Privy Council, where the bias was in their favor. The undisturbed enjoyment of privileges therefore depended upon the executive resources of an organ of government whose authority, though theoretically supreme, was in practice limited by an imperfect control over its agents. The Council had no large bodies of deputies under its immediate appointment and direction, and its ultimate reliance was upon the local justices and burgesses, who were generally swayed more by regard for local good will than by subservience to the central power. The result was that it was impossible adequately to support the grants of privilege.

While directly the monopoly policy culminated in failure, there were some indirect consequences which were distinct gains. Not the least of these was the development of a system of patents for the effective encouragement of invention. This, the original intention of the policy, had become obscured by the excrescences of the system, but the idea had never been abandoned. Even the limited experience in granting patents of this sort had inculcated caution, and gradually provided a body of precedents and the needed administrative machinery, the lack of which had been at first so fatal.

Of hardly less importance was the experience of the monopolies in the accumulation and management of capital. The industrial no less than the commercial monopolies played a leading part in the expansion of business organization and methods. The foreign trading monopolies are usually supposed to have furnished the first field of joint-stock enterprise in England. Yet the mining companies were organized on the basis of a single joint stock more than thirty years before the first "voyage" of the East India Company, and nearly a century before that company gave up its principle of separate joint stocks. The investment of capital in return for shares in a common concern played a part in nearly every important internal monopoly. This was in fact a necessity for the large-scale enterprises that were being projected. When a single industrial concern undertook to supply all the demands of the kingdom for a certain commodity, the resources of a single man were usually inadequate to furnish the capital required, and hence the monopolies offered convenient and suitable opportunities for the investment of small sums. The temporary effect was not always advantageous to the community, since occasion was given to rogues and visionaries to dissipate in considerable amounts the savings of the inexperienced. Through the monopolies, however, were learned in the long run many costly but useful lessons in the management and control of corporate organizations.

Not the least of the gains from the monopoly struggle was that the people became accustomed to excise taxation. A system of indirect internal taxation, in its inception, is peculiarly unpopular. Its inauguration usually requires a serious fiscal emergency, and a firm or stubborn government. The reign of Charles I supplied

both. The monopoly projects of that sovereign opened a rich source of revenue, and, with the scandal of private profit removed and another name substituted for that of monopoly, the government of the Commonwealth was able to introduce a form of taxation for which the nation was at least partially prepared. Popular opinion had been right in regarding unparliamentary taxation as an evil, but the political grievance was adjusted when Parliament authorized the excise.

Furthermore, while the immediate effect of the monopoly policy had been to foster corruption and exploitation of the community for private advantage, the final outcome of the struggle taught the crown the necessity of finding other forms of bounty for favorites; and the same influence helped Parliament to see the expediency of establishing a civil list. Such economic advantages as were thus unconsciously obtained were gains for the future at contemporary expense. Temporarily, little good resulted; ultimately, the gain was by no means trivial.

The same contrast between immediate loss and final gain may be observed on the political and legal side of the struggle. Although for a time the efforts to curb the crown in its encroachments upon private liberties seemed to have been in vain, the permanent outcome was the triumph of freedom. The legal struggle proved that the common law was opposed to "restraint" of trade. A longer struggle ended in the statutory confirmation of the common law. And when the crown ignored both courts and parliaments, an appeal was made to arms by which it was demonstrated that revolution was more than a theoretical remedy when law and statute were violated. To say that the temporary effects of the monopolies were evil, and that the lessons taught by their evils were good, is not to strike a balance in their favor. It argues rather the capacity of Englishmen for remembering their lessons.

APPENDICES

APPENDICES

A

STATUTE OF MONOPOLIES. (21 Jac. I, cap. 3. A. D. 1623–24.) *An act concerning Monopolies and dispensations with penal laws and the forfeitures thereof.*

Forasmuch as your most excellent Majesty, in your royal judgment and of your blessed disposition to the weal and quiet of your subjects, did, in the year of our Lord God one thousand six hundred and ten, publish in print to the whole realm and to all posterity, that all grants of monopolies and of the benefit of any penal laws, or of power to dispense with the law, or to compound for the forfeiture, are contrary to your Majesty's laws, which your Majesty's declaration is truly consonant and agreeable to the ancient and fundamental laws of this your realm; and whereas your Majesty was further graciously pleased expressly to command that no suitor should presume to move your Majesty for matters of that nature: yet nevertheless upon misinformations and untrue pretenses of public good, many such grants have been unduly obtained and unlawfully put in execution, to the great grievance and inconvenience of your Majesty's subjects, contrary to the laws of this your realm, and contrary to your Majesty's royal and blessed intention so published as aforesaid; For avoiding whereof and preventing of all the like in time to come: May it please your Majesty at the humble suit of the Lords spiritual and temporal and the Commons in this present Parliament, that all monopolies and all commissions, grants, licenses, charters, and letters patents heretofore made or granted, or heretofore to be made or granted to any person or persons, bodies politic or corporate whatsoever, of or for the sole buying, selling, making, working, or using of anything within this realm or the dominion of Wales, or of any other monopolies or of power, liberty, or faculty to dispense with any others, or to give license or toleration to do, use, or exercise anything against the tenor

or purport of any law or statute, or to give or make any warrant for any such dispensation, license, or toleration to be had or made, or to agree or compound with any others for any penalty or forfeitures limited by any statute, or of any grant or promise of the benefit, profit, or commodity of any forfeiture, penalty, or sum of money that is or shall be due by any statute before judgment thereupon had, and all proclamations, inhibitions, restraints, warrants of assistance, and all other matters and things whatsoever any way tending to the instituting, erecting, strengthening, furthering, or countenancing of the same or any of them, are altogether contrary to the laws of this realm, and so are and shall be utterly void and of none effect, and in no wise to be put in use or execution.

II. And be it further declared and enacted by the authority aforesaid that all monopolies and all such commissions, grants, licenses, charters, letters patents, proclamations, inhibitions, restraints, warrants of assistance, and all other matters and things tending as aforesaid, and the force and validity of them and every of them ought to be, and shall be forever hereafter examined, heard, tried, and determined by and according to the common law of this realm and not otherwise.

III. And be it further enacted by the authority aforesaid that all person and persons, bodies politic and corporate whatsoever, which now are or hereafter shall be, shall stand and be disabled and incapable to have, use, exercise, or put in use any monopoly or any such commission, grant, license, charters, letters patents, proclamations, inhibition, restraint, warrant of assistance, or other matter or thing tending as aforesaid or any liberty, power, or faculty grounded or pretended to be grounded upon them or any of them.

IV. And be it further enacted by the authority aforesaid that if any person or persons at any time after the end of forty days next after the end of this present session of Parliament shall be hindered, grieved, disturbed, or disquieted, or his or their goods or chattels any way seized, attached, distrained, taken, carried away, or detained by occasion or pretext of any monopoly, or of any such commission, grant, license, power, liberty, faculty, letters patents, proclamations, inhibition, restraint, warrant of assistance, or other matter or thing tending as aforesaid, and will sue to be relieved in

or for any of the premises, that then and in every such case the same person and persons shall and may have his and their remedy for the same at the common law, by any action or actions to be grounded upon this statute, the same action and actions to be heard and determined in the courts of King's Bench, Common Pleas, and Exchequer, or in any of them, against him or them by whom he or they shall be so hindered, grieved, disturbed, or disquieted, or against him or them by whom his or their goods or chattels shall be so seized, attached, distrained, taken, carried away, or detained, wherein all and every such person and persons which shall be so hindered, grieved, disturbed, or disquieted, or whose goods or chattels shall be so seized, attached, distrained, taken, or carried away or detained, shall recover three times so much as the damages which he or they sustained by means or occasion of being so hindered, grieved, disturbed, or disquieted, or by means of having his or their goods or chattels seized, attached, distrained, taken, carried away, or detained, and double costs ; and in such suits, or for the staying or delaying thereof, no essoine, protection, wager, or law, aydeprayer, privilege, injunction, or order of restraint shall be in any wise prayed, granted, admitted, or allowed, nor any more than one imparlance: and if any person or persons shall, after notice given that the action depending is grounded upon this statute, cause or procure any action at the common law grounded upon this statute to be stayed or delayed before judgment, by color or means of any order, warrant, power, or authority, save only of the court wherein such action as aforesaid shall be brought and depending, or after judgment had upon such action, shall cause or procure the execution of or upon any such judgment to be stayed or delayed by color or means of any order, warrant, power, or authority, save only by writ of error or attaint, that then the said person and persons so offending shall incur and sustain the pains, penalties, and forfeitures ordained and provided by the statute of Provision and Premunire made in the sixteenth year of the reign of King Richard the Second.

V. Provided nevertheless, and be it declared and enacted that any declaration before mentioned shall not extend to any letters patents, and grants of privilege, for the term of one and twenty years or under, heretofore made of the sole working or making of

any manner of new manufacture within this realm, to the first and true inventor or inventors of such manufactures which others at the time of making of such letters patents and grants did not use, so they be not contrary to the law nor mischievous to the state, by raising of the prices of commodities at home, or hurt of trade, or generally inconvenient, but that the same shall be of such force as they were or should be if this act had not been made, and of none other: and if the same were made for more than one and twenty years, that then the same for the term of one and twenty years only, to be accounted from the date of the first letters patents and grants thereof made, shall be of such force as they were or should have been if the same had been made but for the term of one and twenty years only, and as if this act had never been had or made, and of none other.

VI. Provided also, and be it declared and enacted that any declaration before mentioned shall not extend to any letters patents and grants of privileges for the term of fourteen years or under, hereafter to be made of the sole working or making of any manner of new manufactures within this realm, to the true and first inventor and inventors of such manufactures which others at the time of making such letters patents and grants shall not use, so as also they be not contrary to the law nor mischievous to the state, by raising prices of commodities at home, or hurt of trade, or generally inconvenient, the said fourteen years to be accounted from the date of the first letters patents or grant of such privilege hereafter to be made, but that the same shall be of such force as they should be if this act had never been made and of none other.

VII. Provided also, and it is hereby further intended, declared, and enacted by the authority aforesaid that this act or anything therein contained shall not in any wise extend or be prejudicial to any grant or privilege, power, or authority whatsoever heretofore made, granted, allowed, or confirmed by any act of Parliament now in force, so long as the same shall so continue in force.

VIII. Provided also, that this act shall not extend to any warrant or privy seal made or directed, or to be made or directed by his Majesty, his heirs, or successors, to the justices of the courts of the King's Bench or Common Pleas, and barons of the Exchequer, justices of assize, justices of oyer and terminer, and gaol delivery;

justices of the peace and other justices for the time being, having power to hear and determine offenses done against any penal statute, to compound for the forfeitures of any penal statute depending in suit and question before them or any of them respectively, after plea pleaded by the party defendant.

IX. Provided also, and it is hereby further intended, declared, and enacted that this act or anything therein contained shall not in any wise extend or be prejudicial unto the city of London, or to any city, borough, or town corporate within this realm, for or concerning any grants, charters, or letters patents to them or any of them made or granted, or for or concerning any custom or customs used by or within them or any of them or unto any corporations, companies, or fellowships of any art, trade, occupation, or mistery, or to any companies or societies of merchants within this realm, erected for the maintenance, enlargement, or ordering of any trade of merchandise, but that the same charters, customs, corporations, companies, fellowships, and societies, and their liberties, privileges, powers, and immunities, shall be and continue of such force and effect as they were before the making of this act, and of none other: anything before in this act contained to the contrary in any wise notwithstanding.

X. Provided also, and be it enacted that this act or any declaration, provision, disablement, penalty, forfeiture, or other thing before mentioned shall not extend to any letters patents or grants of privilege heretofore made or hereafter to be made of, for, or concerning printing: nor to any commission, grant, or letters patents heretofore made or hereafter to be made of, for, or concerning the digging, making, or compounding of saltpeter or gunpowder; or the casting or making of ordnance or shot for ordnance; nor to any grant of letters patents heretofore made, or hereafter to be made of any office or offices heretofore erected, made, or ordained, and now in being and put in execution, other than such offices as have been decreed by any his Majesty's proclamation or proclamations: but that all and every the same grants, commissions, and letters patents and all other matters and things tending to the maintaining, strengthening, or furtherance of the same or any of them, shall be and remain of the like force and effect, and no other, and as free from the declarations, provisions, penalties, and forfeitures

contained in this act, as if this act had never been had nor made, and not otherwise.

XI. Provided also, and be it enacted that this act or any declaration, provision, disablement, penalty, forfeiture, or other thing before mentioned, shall not extend to any commission, grant, letters patents, or privileges, heretofore made or hereafter to be made of, for, or concerning the digging, compounding, or making of alum or alum-mines, but that all and every the same commissions, grants, letters patents, and privileges shall be and remain of the like force and effect, and no other, and as free from the declarations, provisions, penalties, and forfeitures contained in this act, as if this act had never been had nor made, and not otherwise.

XII. Provided also, and be it enacted that this act or any declaration, provision, penalty, forfeiture, or other thing before mentioned, shall not extend or be prejudicial to any use, custom, prescription, franchise, freedom, jurisdiction, immunity, liberty, or privilege heretofore claimed, used, or enjoyed by the governors and stewards and brethren of the fellowship of the Hostmen of the town of Newcastle-upon-Tyne, or by the ancient fellowship, guild, or fraternity commonly called Hostmen; for or concerning the selling, carrying, lading, disposing, shipping, venting, or trading of or for any sea-coals, stone-coals or pit-coals forth or out of the haven and river of Tyne: or to a grant made by the said governors and stewards and brethren of the fellowship of the said hostmen to the late Queen Elizabeth, of any duty or sum of money to be paid for or in respect of any such coals as aforesaid; nor to any grants, letters patents, or commissions heretofore granted or hereafter to be granted of, for, or concerning the licensing of the keeping of any tavern or taverns, or selling, uttering, or retailing of wines to be drunk or spent in the mansion house or houses, or other place, in the tenure or occupation of the party or parties so selling or uttering the same; or for or concerning the making of any compositions for such licenses, so as the benefit of such compositions be reserved and applied to and for the use of his Majesty, his heirs, or successors, and not to the private use of any other person or persons.

XIII. Provided also, and be it enacted that this act or any declaration, provision, penalty, forfeiture, or other thing before men-

tioned shall not extend or be prejudicial to any grant or privilege for or concerning the making of glass by his Majesty's letters patents under the great seal of England, bearing date of the two and twentieth day of May in the one and twentieth year of his Majesty's reign of England, made and granted to Sir Robert Mansell, Knight, vice-admiral of England; nor to a grant or letters patents bearing date the twelfth day of June in the thirteenth of his Majesty's reign of England, made to James Maxwell, Esquire, concerning the transportation of calf-skins, but that the said several letters patents last mentioned shall be and remain of the like force and effect, and as free from the declarations, provisions, penalties, and forfeitures before mentioned as if this act had never been had nor made, and not otherwise.

XIV. Provided also, and be it declared and enacted that this act or any declaration, provision, penalty, forfeiture, or other thing before mentioned shall not extend or be prejudicial to a grant or privilege for or concerning the making of smalt by his Majesty's letters patents under the great seal of England bearing date the sixteenth day of February in the sixteenth year of his Majesty's reign of England, made or granted to Abraham Baker; nor to a grant of privilege for or concerning the melting of iron ore and of making the same into cast works or bars with sea-coals or pit-coals by his Majesty's letters patents under the great seal of England bearing date the twentieth day of February in the nineteenth year of his Majesty's reign of England, made or granted to Edward Lord Dudley, but that the same several letters patents and grants shall be made and remain of the like force and effect and as free from the declarations, provisions, penalties, and forfeitures before mentioned as if this act had never been had nor made, and not otherwise.

B

ITEMS FROM "NOTES OF QUEEN ELIZABETH'S REIGN BY THE LORD TREASURER BURGHLEY"

(Murdin's *Cecil or Burghley Papers*, pp. 747 ff.)

Dec. 1st, 1565. The Queen's Majesty granted a license to the Duke of Norfolk for carrying of wool out of Norfolk.

August, 1585. A privilege granted to Thomas Wilkes, clerk of the Council, to bring in white salt within the ports of Lynn and Boston.

January, 1586. The grant to Sir Thomas Wilkes renewed, with including of Hull, with proviso, that if he shall not make sufficient provision thereof, it shall be lawful for any other to bring in salt.

April, 1587. A privilege granted to Richard Young of London, for making starch only upon bran of wheat, paying £40 yearly.

Nov. 17th, 1588. A license to Bevis Bulmer for twelve years for the use of an instrument for cutting of iron into small rods.

December, 1588. A license to William Stubbes for transporting out of Ireland one thousand packs of linen yarn.

January, 1589. A license to John Spillman to buy linen rags for making of white paper.

May, 1589. A license to Lord Hunsdon to transport 20,000 broadcloths for the space of six years, paying the custom after six months shipping.

September, 1589. A license to Thomas Proctor and William Peterson to make iron and lead, with sea-coal and turf.

September, 1589. A prohibition for the execution of the exemplification of her Majesty's grant of the penalty for sowing flax and hemp.

June, 1590. A grant to William Carre to give license to any Englishman to brew, and sell any beer in the city of London, Westminster, or in Suffolk, Essex, Kent, Middlesex, Sussex, and Surrey to be transported beyond the seas.

Oct. 1st, 1591. A privilege granted to Reynold Hopton for the making of flasks, powder-boxes, and bullet-boxes during fifteen years.

A grant to Anthony Martin to give license to merchants to transport tin.

January, 1592. A grant to Jerome Bowes for twelve years after the term of James Verselini for making glass.

April, 1592. A privilege to Simon Farmer and John Craford of carrying out of list and shreds of cloth paying 40s. per annum.

May, 1592. The office to write protections to collect alms for poor people granted to Mark Stuard and Simon Stuard for term of their lives.

May, 1592. A privilege granted to John Norden to imprint a book called *Specular.*

July, 1592. A warrant to the lord treasurer and chancellor of the Exchequer to grant license for carriage out of beer and corn, reserving for every tun of beer and for every quarter of wheat above the ordinary custom, as they two shall think reasonable.

October, 1592. A grant to H. Neville, Esq., Rudolph Inglested, and Giles Vischer, to transport, during 20 years, wy[ ] and faucons of cast iron, with a proviso for the queen to revoke the same at any time within six months.

November, 1592. A grant to Thomas Knevett of £2000 in consideration of his former grant of transportation of corn and beer, and otherwise for his service.

December, 1592. A grant to Dr. Lopaz for bringing in anise-seed and sumach.

May, 1593. A gift of her Majesty of £800 to Sir John Pakington without account.

July, 1593. A license to H. Noell for fifteen years for the only bringing in of stone pots and bottles and heath brush.

August, 1593. A privilege granted to Bryan Annesley for bringing in steel after the determination of a grant made to Rob. Beale.

March, 1594. A grant to Edw. Darcy of the Privy Chamber for searching and sealing all kinds of buffs.

March, 1594. A privilege granted to Ric. Drake of the Stables to brew beer and ale for making aqua vitae and beer vinegar.

April, 1594. A privilege granted to Robert Alexander and Richard Monpeson to bring in anise-seed and sumach into the realm.

May, 1594. A grant made to the master, &c., of the Trinity House of Deptford of the lastage and ballastage of ships in the river of Thames.

July 1st, 1594. A privilege granted to Sir John Pakington for starch, yielding to her Majesty, yearly £15, with prohibition to make none but of the bran of wheat.

September, 1594. A privilege to Michael Stanhope, groom of the Privy Chamber, for the bringing in of Spanish wool upon D. Ector's grant determined.

September, 1594. A grant to Henry Bellingham for surveying of all cordage, with proviso of revocation.

March, 1596. A joint patentship to Thomas Windebank and Thomas Lake for writing letters patents.

November, 1596. A grant to William Carre, Esq., for brewing and selling beer for the space of seven years within the cities of London and Westminster, and the counties of Suffolk, Essex, Kent, Middlesex, Surrey, and Sussex.

C

A NOTE OF MONOPOLIES, 1603

(Lodge: *Illustrations of British History*, 1791, vol. iii, pp. 159 ff. Reproduced from Talbot *Papers*, vol. K, fol. 79, endorsed by the Earl of Shrewsbury.)

Monopolies

33 Eliz. A grant to Reynold Hopton only, and no other, to make flasks, touch-boxes, powder-boxes, and bullet-boxes, for 15 years.

34 Eliz. A grant to Simon Farmer and John Craford only, and no other, to transport list and shreds of woollen cloth, and all manner of horns, for 21 years.

35 Eliz. A grant to Bryan Annesley, solely, and no other, to buy and provide steel beyond sea and sell the same within this realm for 21 years.

36 Eliz. A grant to Robert Alexander only, and no other, to buy and bring in anise-seeds, sumach, &c., for 21 years.

39 Eliz. A grant to John Spillman only, and no other, to buy linen rags, and to make paper.

40 Eliz. A grant to Ede Schetts, and his assignees only, and no other, to buy and transport ashes and old shoes for seven years.

36 Eliz. A grant to [ ] only, and no other, to provide and bring in all Spanish wools for making of felt hats, for 20 years.

34 Eliz. A grant that Sir Jerome Bowes, and no other, shall make glasses for 12 years.

42 Eliz. A grant made to Harding and others only, concerning saltpeter.

41 Eliz. A grant that Brigham and Wimmes shall only have the pre-emption of tin.

Other Monopolies for one Man only and no other

To register all writings and assurances between merchants, called policies.

To make spangles.

To print the *Psalms of David.*

To print *Cornelius Tacitus.*

To sow woad in certain numbers of shires.

To print grammars, primers, and other school-books.

To print the law.

To print all manner of songs in parts.

To make mathematical instruments.

To plainish and hollow silver vessels.

That one man and no other shall make writs of subpoena in Chancery. Sir Thomas George.

To write all writs of supplication and supersedeas for the peace and good behaviour, and all pardons of outlawry, George Carew.

To draw leases in possession made by the king. Sir Edward Stafford.

To engross all leases by the great seal.

Licenses and Dispensations to one Man only, of the whole Penalty of Penal Laws, and Power given to license others

[18] Eliz. A license to Sir Edward Dyer, to pardon and dispense with tanning of leather, contrary to the statute of 5 Eliz., and to license any man to be a tanner.

30 Eliz. A patent to Sir Walter Raleigh, to make licenses for keeping of taverns and retailing of wines throughout England.

31 Eliz. The grant to John Ashley and Thomas Windebank, to have all forfeitures and penalties for burning of timber trees to make iron, contrary to the statute of 1 Eliz.

36 Eliz. A license to Roger Bineon, and others, to take the whole forfeiture of the statute of 5th and 6th of Edw. VI, for pulling down gig-mills.

37 Eliz. A license to William Smith only, and no other, to take

the benefit of the statute of 5 Eliz. for gashing of hides, and barking of trees.

38 Eliz. A license to Thomas Cornwallis only, and no other, to make grants and licenses for keeping of gaming-houses, and using of unlawful games, contrary to the statute of 33 Henry VIII.

39 Eliz. A license to William Carre, for nine years, to authorize and license any person to brew beer to be transported beyond sea.

40 Eliz. A license to Richard Coningsby, to give license for buying of tin throughout England.

41 Eliz. A license to Richard Carnithen only, to bring in Irish yarn for seven years.

Impositions

41 Eliz. A grant to Bevis Bulmer to have an imposition of sea-coal, paying £6200 rent for 21 years.

36 Eliz. A grant made to John Parker, Esq., to have twelve-pence for filing of every bill in Chancery in respect whereof the subject is to be discharged of payment of anything of search.

41 Eliz. A license to trade the Levant seas with currants only, paying £4000 per annum.

Particular licenses to transport certain numbers of
pelts of sheep-skins and lamb-skins.
Certain numbers of woollen cloths.
Certain numbers of dickers of calf-skins.

New Inventions

Only and no other, so as they were never used in England before
To inn and drain [ ] grounds.
To take water fowl.
To make devices of safe-keeping of corn.
To make a device for soldiers to carry necessary provisions.

D

ROBERT CECIL'S LIST OF MONOPOLIES, 1601

(Townshend, pp. 244–45.)

Mr. Secretary Cecil read a paper of three or four sheets openly of all the patents granted since 16 Reginae, and first he read in the 17th of the queen

A patent to Robert Sparke, to make spangles, and owes of gold.

18th Reginae

A patent to Sir Edward Dyer, to pardon, dispense, and release all forfeitures and abuses committed by tanners, contrary to the statute.

19 Reginae

A patent to William Wade, Esquire, *et al.*, for the making of sulphur, brimstone, and oil.

A patent to James Chambers, to give license for tanning, contrary to the statute.

30 Reginae

A patent to Sir Walter Raleigh, of tunnage and poundage of wines.

To John Ashley *et al.*, a patent for benefit of forfeiture of buying of S——.

To William Watkins *et al.*, a patent to print almanacs.

A patent to [ ], to print *David's Psalms.*

A patent to one Kirke *et al.*, to take the benefit of sowing flax and hemp.

A patent to Richard Welsh, to print the *History of Cornelius Tacitus.*

A patent to [ ], to transport iron and tin.

A patent to John Norden, to print *Speculum Britanniae.*

A patent to [ ], to print the *Psalms of David*, according to the Hebrew text.

A patent to certain merchants, to traffic.

A patent to Sir Jerome Bowes, to make glasses.

A patent to [ ], to provide and transport lists and shreds.

35 Reginae

A patent to Henry Noell to make stone pots, &c.

A license to William Arber, to sow six hundred acres of ground with woad.

A patent to Mr. Hale, to provide steel beyond the seas.

A patent to [ ], to have one shilling upon every hogshead of pilchards.

A patent to [ ], to have the benefit of forfeiture by gig-mills.

A patent to Elizabeth Mathews for train oil of blubber.

A patent to Richard Drake, for aqua composita, aqua vitae, vinegar, and alegar.

A patent to Robert Alexander, for anise-seeds.

A patent to Edward Darcy, for steel.

A patent to Michael Stanhope, for Spanish wools.

A patent to Valentine Harris, to sow six hundred acres of ground with woad.

A patent to [ ], to take benefit of the statute for gashing of hides, &c.

A patent to Mr. Cornwallis, for unlawful games.

A patent to Henry Singer, touching printing of school-books.

A license to Arthur Bassaney, to transport six thousand calf-skins.

A patent to Edward Darcy, to provide, bring, make, and utter cards.

A patent to Thomas Morley, to print songs in parts.

A patent to Sir John Pakington, for starch and ashes.

A patent to [ ], to make mathematical instruments.

A patent to [ ], to make saltpeter.

A patent to Thomas Wight and Bonham Norton, to print the law-books.

A patent to [ ], for livers of fishes.

A patent to [ ], for polldavis, for fishing.

E

LISTS OF PATENTS GRANTED BETWEEN THE PARLIAMENTS OF 1597 AND 1601

(Townshend, p. 239.)

Currants
Iron
Powder
Cards
Horns
Ox shin-bones
Train oil
Lists of cloth
Ashes
Bottles
Glasses
Bags
Shreds of gloves
Anise-seed
Vinegar
Sea-coals
Steel
Aqua vitae
Brushes
Pots
Salt
Saltpeter
Lead
Accedence
Oil
Transportation of leather
Calamine-stone
Oil of blubber
Fumothoes, or dried pilchards in the smoke
And divers others

F

ANOTHER LIST, 1601

(Townshend, pp. 243–244.)

1. To Sir Henry Neville, the patent for ordnance.
2. To Simon Farmer, the patent for lists, shreds, and horns to be transported.
3. To Henry Noell, the patent for stone pots and bottles.*
4. To Bryan Annesley, the patent for steel.
5. To Elizabeth Matthews, the patent of oil of blubber.
6. To Richard Drake, the patent for aqua composita and aqua vitae.
7. To Michael Stanhope, the patent for Spanish wools.
8. To Thomas Cornwallis, a license to keep unlawful games.
9. To Mr. Carre, a patent for brewing of beer to be transported.
10. To John Spillman, a patent to make paper.
11. To Edward Darcy, a patent for cards.
12. To Mr. John Pakington, a patent for starch.
13. To Sir Walter Raleigh, a patent for wines.

*The patent for bottles was lately made void by judgment in the Exchequer.

G

"NOTE OR CATALOGUE SHOWED, ONLY ALTERED IN SOME PLACES FOR ORDER'S SAKE." 1601

(D'Ewes, p. 650.)

To Sir Henry Neville the patent for ordnance.
To Sir Jerome Bowes the patent for glasses.
To Simon Farmer the patent for lists, shreds, and horns to be transported.
To Sir Henry Noell the patent for stone pots and bottles.
To Bryan Annesley the patent for steel.
To Elizabeth Matthews the patent for oil of blubber.
To Richard Drake a patent for aqua composita and aqua vitae.
To Michael Stanhope a patent for Spanish wools.
To Thomas Cornwallis the license to keep unlawful games.
To William Carre a patent for brewing of beer to be transported.
To John Spillman a license to make paper.
To Edward Darcy a patent for cards.
To Sir John Pakington the patent for starch.
To Sir Walter Raleigh the patent for tin.
To William Wade, Esq. the making of sulphur, brimstone, and oil.
To James Chambers a license for tanning.
To William Watkins and James Roberts a license to print almanacs.
To Richard Welsh to print the *History of Cornelius and* [*sic*] *Tacitus*.
To John Norden to print *Speculum Britanniae*.
To certain merchants to traffic.
To William Allin to sow six hundred acres of ground with woad.
To Mr. Hale to provide steel beyond the seas.
To Mr. Robert Alexander for anise-seeds.
To Edward Darcy a patent for steel.
To Valentine Harris to sow six hundred acres with woad.
To Sir Henry Singer touching the printing of school-books.
To Arthur Bassaney a license to transport six thousand calf-skins.

To Thomas Morley to print songs in three parts.
To Sir John Pakington for starch and ashes.
To Thomas Wight & Bonham Norton to print law-books.

And divers others of no great moment touching the transportation of iron and tin, the sowing of hemp and flax, the gashing of hides, the forfeiture of gig-mills, the making of mathematical instruments, the making of saltpeter, the printing of the *Psalms of David*, and touching fishers, pouldavies, and certain forfeitures.

H

BACON'S SPEECH, NOVEMBER 20, 1601

(Townshend, pp. 231–2.)

For the prerogative royal of the prince: For my part, I ever allowed of it; and it is such as I hope I shall never see discussed. The queen, as she is our sovereign, hath both an enlarging and restraining liberty of her prerogative; that is, she hath power by her patents, to set at liberty things restrained by statute-law or otherwise: And by her prerogative, she may restrain things that are at liberty.

For the first: She may grant *non obstantes*, contrary to the penal laws; which truly, in my own conscience, are as hateful to the subject as monopolies. For the second: If any man out of his own wit, industry, or endeavor, find out anything beneficial for the commonwealth, or bring any new invention, which every subject of this realm may use; yet in regard of his pains, travail, and charge therein, her Majesty is pleased (perhaps) to grant him a privilege to use the same only by himself, or his deputies, for a certain time: This is one kind of monopoly. Sometimes there is a glut of things, when they be in excessive quantities, as of corn; and perhaps, her Majesty gives license to one man of transportation: This is another kind of monopoly. Sometimes there is a scarcity, or small quantity; and the like is granted also.

These, and divers of this nature, have been in trial, both in the Common-Pleas, upon actions of trespass, where if the judges do find the privilege good for the commonwealth, they will allow it, otherwise disallow it. And also, I know, that her Majesty herself, hath given command to her attorney-general, to bring divers of them (since the last Parliament) to trial in the Exchequer. Since which, fifteen or sixteen to my knowledge, have been repealed: Some upon her Majesty's own express command, upon complaint made unto her by petition; and some by *quo warranto*, in the Exchequer.

But, Mr. Speaker (said he, pointing to the bill), this is no

stranger in this place; but a stranger in this vestment. The use hath been ever, by petition to humble ourselves to her Majesty, and by petition to desire to have our grievances redressed; especially, when the remedy toucheth her so nigh in prerogative. All cannot be done at once; neither was it possible, since the last Parliament, to repeal all. If her Majesty makes a patent, or a monopoly, to any of her servants; that we must go and cry out against: But if she grants it to a number of burgesses, or corporation, that must stand; and that, forsooth, is no monopoly.

I say, and I say again, that we ought not to deal, or meddle with, or judge of her Majesty's prerogative. I wish every man, therefore, to be careful in this point. And humbly pray this House to testify with me, that I have discharged my duty, in respect of my place, in speaking on her Majesty's behalf; and do protest, I have delivered my conscience, in saying what I have said.

J

ELIZABETH'S PROCLAMATION CONCERNING MONOPOLIES NOVEMBER 28, 1601

Brit. Mus. Proc. Coll. (G. 6463–388.)

By the Queen

A proclamation for the reformation of many abuses and misdemeanors committed by patentees of certain privileges and licenses, to the general good of all her Majesty's loving subjects.

Whereas her most excellent Majesty having granted divers privileges and licenses (upon many suggestions unto her Highness, that the same should tend to the common good and profit of her subjects), hath since the time of those grants received divers informations of sundry grievances lighting upon many of the poorer sort of her people (by force thereof) contrary to her Majesty's expectation at the time of those grants: All which being duly examined, by such as her Majesty hath directed to consider and report the state of such complaints as have been made in that behalf, it doth appear that some of the said grants were not only made upon false and untrue suggestions contained in her letters patents, but have been also notoriously abused, to the great loss and grievance of her loving subjects (whose public good she tendereth more than any worldly riches):

And whereas also upon like false suggestions, there have been obtained of the lords of her Highness's Privy Council divers letters of assistance, for the due execution of divers of the said grants, according to her Highness's gracious intention and meaning.

Forasmuch as her most excellent Majesty (whose care and providence never ceaseth to preserve her people in continual peace and plenty) doth discern that these particular grants ensuing: namely, of or in any wise concerning salt, salt upon salt, vinegar, aqua vitae, or aqua composita, or any liquor concerning the same, salting and packing of fish, train oil, blubbers or livers of fish, pol-

davies and mildernix, pots, brushes, and bottles, and starch, have been found in consequence so far differing from those main grounds and reasons which have been mentioned in the grants and have also in the execution of the said letters patents been extremely abused, contrary to her Highness's intention, and meaning therein expressed: She is now pleased of her mere grace and favor to all her loving subjects, and by her regal power and authority to publish and declare (by virtue hereof) all the said grants above mentioned and every clause, article, and sentence (in the letters patents thereof contained) to be void. And doth further expressly charge and command all the said patentees, and all and every person and persons claiming by, from, or under them, or any of them, that they or any of them do not at any time hereafter presume or attempt to put in use, or execution, anything therein contained, upon pain of her Highness's indignation, and to be punished as contemners and breakers of her royal and princely commandment.

And whereas her Majesty hath also granted divers other privileges and licenses, some for the better furnishing of the realm with such warlike provisions as are necessary for the defense thereof, (as namely that concerning saltpeter), and some of other kinds to particular persons which have sustained losses and hindrances by service at sea and land, or such as have been her Majesty's ancient domestical servitors, or for some other like considerations, as namely, new drapery, Irish yarn, calf-skins, pelts, cards, glasses, searching and sealing of leather, and steel, and such like: In which grants also her Highness hath been credibly informed that there hath been abuse in the execution of them, to the hurt and prejudice of her loving subjects (whereof she meaneth also that due punishment shall follow upon such as shall be found to have particularly offended), her Majesty doth by these presents likewise publish, notify, and declare her gracious will and pleasure to be, that all and every her Highness's loving subjects, that at any time hereafter shall find themselves grieved, injured, or wronged by reason of any of the said grants, or any clause, article, or sentence therein contained, may be at his or their liberty to take their ordinary remedy by her Highness's laws of this realm, any matter or thing in any of the said grants to the contrary notwithstanding.

And forasmuch as her Majesty (with the advice of her Privy

Council) is now resolved that no letters from henceforth shall be written from them to assist these grants, seeing they have served for pretexts to those that have had them, to terrify and oppress her people (merely contrary to the purpose and meaning of the same), her Majesty doth straightly charge and command, that no letters of assistance that have been granted by her Council for execution of these grants, shall at any time hereafter be put in execution, or any of her loving subjects be thereby enforced to do or perform anything therein contained. And that no pursuivant, messenger of her Highness's Chamber, or other officer whatsoever do or at any time hereafter presume or attempt anything against any of her loving subjects, by pretext or color of any such letters of assistance for execution or putting in use of any of those aforesaid grants, or anything therein contained.

And as her Majesty doth greatly commend the duty and obedience that her loving subjects have yielded in conforming themselves to the said grants, being under the great seal of England: So her Majesty doth notify and signify by these presents that if any of her subjects shall seditiously or contemptuously presume to call in question the power or validity of her prerogative royal, annexed to her imperial crown, in such cases all such persons so offending shall receive severe punishment, according to their demerits.

And whereas she hath also been informed that divers of her subjects are desirous to be set at liberty for the sowing of woad, restrained by a proclamation in the fortieth and two year of her reign, at which time it was thought by many men of good experience that such restraint would be a mean to prevent sundry inconveniences, forasmuch as her Majesty had never other purpose by that restraint than to do that which might be for the greatest and most general benefit of her subjects: Her Highness is also pleased (and so she doth) by this proclamation set at liberty all such persons as shall think it for their good to employ their grounds to the use of sowing of woad, notwithstanding any such prohibition in any former proclamation. Provided always, that it shall not be lawful for any person or persons whatsoever to convert any ground that shall be within three miles of the city of London, or near any of her Majesty's houses of access, or so near to any other great city or town

corporate, whereby any offense may grow from the noisome savor of the same.

Given at our palace at Westminster the 28th day of November, in the fortieth and four year of her Majesty's most prosperous reign.

God save the Queen.

Imprinted at London by Robert Barker, printer to the queen's most excellent Majesty.

K

THE "GOLDEN SPEECH" OF QUEEN ELIZABETH TO HER LAST PARLIAMENT, NOVEMBER THE 30TH, ANNO DOMINI, 1601

("From a genuine copy in the collection of the Right Rev. the Lord Bishop of Bangor." Somers, *Tracts*, i, 244–246.)

Her Majesty being set under state in the Council Chamber at Whitehall, the speaker, accompanied with privy councilors, besides knights and burgesses of the lower House to the number of eight-score, presenting themselves at her Majesty's feet, for that so graciously and speedily she had heard and yielded to her subjects' desires, and proclaimed the same in their hearing as followeth:

Mr. Speaker:

We perceive your coming is to present thanks unto us. Know I accept them with no less joy than your loves can have desire to offer such a present, and do more esteem it than any treasure or riches; for those we know how to prize, but loyalty, love, and thanks, I account them invaluable; and though God hath raised me high, yet this I account the glory of my crown, that I have reigned with your loves. This makes that I do not so much rejoice that God hath made me to be queen, as to be queen over so thankful a people, and to be the means under God to conserve you in safety, and preserve you from danger, yea to be the instrument to deliver you from dishonor, from shame, and from infamy, to keep you out of servitude, and from slavery under our enemies, and cruel tyranny, and vile oppression intended against us; for the better withstanding whereof, we take very acceptable your intended helps, and chiefly in that it manifesteth your loves and largeness of hearts to your sovereign. Of myself, I must say this, I never was any greedy scraping grasper, nor a strict fast-holding prince, nor yet a waster; my heart was never set upon any worldly goods, but only for my subjects' good. What you do bestow on me I will not hoard up, but receive it to bestow on you again; yea mine own properties

I account yours to be expended for your good, and your eyes shall see the bestowing of it for your welfare.

Mr. Speaker, I would wish you and the rest to stand up, for I fear I shall yet trouble you with longer speech.

Mr. Speaker, You give me thanks, but I am more to thank you, and charge you to thank them of the Lower House from me; for had I not received knowledge from you, I might a'fallen into the lapse of an error, only for want of true information.

Since I was queen, yet did I never put my pen to any grant but upon pretext and semblance made me, that it was for the good and avail of my subjects generally, though a private profit to some of my ancient servants, who have deserved well; but that my grants shall be made grievances to my people, and oppressions, to be privileged under color of our patents, our princely dignity shall not suffer it.

When I heard it, I could give no rest unto my thoughts until I had reformed it, and those varlets, lewd persons, abusers of my bounty, shall know I will not suffer it. And, Mr. Speaker, tell the House for me, I take it exceeding grateful, that the knowledge of these things are come unto me from them. And tho' amongst them principal members are such as are not touched in private, and therefore need not speak from any feeling of grief, yet we have heard that other gentlemen also of the House, who stand as free, have spoken as freely in it; which gives us to know, that no respects or interests have moved them other than the minds they bear to suffer no diminution of our honor and our subjects' love unto us. The zeal of which affection tending to ease my people, and knit their hearts unto us, I embrace with a princely care far above all earthly treasures. I esteem my people's love, more than which I desire not to merit: and God, that gave me here to sit, and placed me over you, knows, that I never respected myself, but as your good was conserved in me; yet what dangers, what practices, and what perils I have passed, some, if not all of you know; but none of these things do move me, or ever made me fear, but it 's God that hath delivered me.

And in my governing this land, I have ever set the last judgment day before mine eyes, and so to rule as I shall be judged and answer before a higher Judge, to whose judgment seat I do appeal: in

that never thought was cherished in my heart that tended not to my people's good.

And if my princely bounty have been abused, and my grants turned to the hurt of my people contrary to my will and meaning, or if any in authority under me have neglected, or converted what I have committed unto them, I hope God will not lay their culps to my charge.

To be a king, and wear a crown, is a thing more glorious to them that see it than it 's pleasant to them that bear it: for myself, I never was so much enticed with the glorious name of a king, or the royal authority of a queen, as delighted that God hath made me his instrument to maintain his truth and glory, and to defend this kingdom from dishonor, damage, tyranny, and oppression. But should I ascribe any of these things to myself or my sexly weakness, I were not worthy to live, and of all most unworthy of the mercies I have received at God's hands, but to God only and wholly all is given and ascribed.

The cares and troubles of a crown I cannot more fitly resemble than to the drugs of a learned physician, perfumed with some aromatical savor, or to bitter pills gilded over, by which they are made more acceptable or less offensive, which indeed are bitter and unpleasant to take; and for my own part, were it not for conscience sake to discharge the duty that God hath laid upon me, and to maintain his glory, and keep you in safety, in mine own disposition I should be willing to resign the place I hold to any other, and glad to be freed of the glory with the labors, for it is not my desire to live nor to reign longer than my life and reign shall be for your good. And though you have had and may have many mightier and wiser princes sitting in this seat, yet you never had nor shall have any that will love you better.

Thus, Mr. Speaker, I commend me to your loyal loves, and yours to my best care and your further counsels, and I pray you, Mr. Controller and Mr. Secretary, and you of my Council, that before these gentlemen depart into their countries, you bring them all to kiss my hand.

L

PROCLAMATION OF JAMES I SUSPENDING MONOPOLIES

(Soc. Ant. Proc. Coll. May 7, 1603.)

[Preamble praising the devotion and loyalty of the people:]

The consideration whereof hath moved us to think of such ways as for the present did occur unto us, wherein we might make manifest to our people, how willing we are now, and will be ready hereafter, to be forward in requiting their love, as they have been in expressing it.

On which consideration whilst we were busy, we were informed that the queen our sister, deceased, finding, some few years before her death, that some things had passed her hands, at the importunity of her servants, whom she was willing to reward with little burden to her estate (otherwise by necessary occasion exhausted), which, though they had and might have foundation in princely prerogative, yet either by too large extending thereof, or for the most part in respect that they were of such nature as could hardly be put in use without hindrance to multitudes of people, or else committed to inferior persons, who in the execution thereof did so exceedingly abuse the same, as they became intolerable, had purposed to revoke all grants of that nature, and did begin with some which were heard most unjust; putting the rest to the examination of her laws, to stand or fall, as in construction of law they might consist or not.

[All grants and charters of monopoly suspended, together with all licenses to dispense with penal laws, except grants to corporations and companies of arts or "misteries" and for enlarging trade until examination can be had of them by the king with the advice of his Council.

Protections, and assignments of debts abolished.

Saltpetermen and purveyors exhorted to have especial care.

Subjects to petition privately in an orderly manner, not publicly.

M

DELEGATION OF THE EXECUTION OF PENAL STATUTES

The Letter sent by all the Judges to the Lords

(S. P. D. November 8, 1604.)

May it please your Lordships,

We have (as we were required by your honorable letters of the 21st of October last) conferred and considered amongst ourselves (calling to us his Majesty's counsel learned) of such matters as were thereby referred unto us, and have resolved for law and convenience as followeth:

That the prosecution and execution of any penal statute cannot be granted to any, for that the act, being made by the policy and wisdom of the Parliament, for the general good of the whole realm, and of trust committed to the king, as to the head of justice and of the *weale publique* the same cannot by law be transferred over to any subject, neither can any general statute be prosecuted or executed by his Majesty's grant, in other manner or order of proceeding, than by the act itself is provided and prescribed. Neither do we find any such grant to any in former ages. And of late years upon doubt conceived that penal laws might be sought to be granted over, some Parliaments have forborne to give forfeitures to the crown, and have disposed thereof to the relief of the poor, and other charitable uses, which cannot be granted or employed otherwise.

We are also of the opinion that it is inconvenient that the forfeitures upon penal laws or others of like nature should be granted to any before the same be received or vested in his Majesty by due and lawful proceedings, — for that in our experience it maketh the more violent and undue proceedings against the subject, to the scandal of justice, and the offence of many. But if by the industry or diligence of any, there accrueth any benefit to his Majesty, after the receipt, such have been rewarded out of the same, at the king's pleasure.

N[1]

LETTER OF THE PRIVY COUNCIL TO THE TOWN OF MIDDLEBURGH

(Council Register, September 8, 1614.)

A Messieurs

Bourgo-Maistres et Eschevins de la Ville de Middlebourg en Zeland.

Messieurs

Cest chose notoire, d'ont vous eteez bien advertize (car sur ce fait, vous auez depuis naguères enuoyé vos Deputez vers sa Ma^tie^ de la Grand Bretagne), qu'il y a eu vne grande & longue dispute entre les marchands d'Angleterre, touchant le transport de drapes blancs ou teincts & en couleur. Après vn grand debat & meure deliberation cà esté arresté par commandement de sa Ma^tie^ auec l'aduis de Nous Autres de son Conseil que les Marchands Adventuriers (d'ont vne partie tient sa residence en v^re^ ville) iusques à la Tous Saincts continueront à traffiquer à la mode qu'ilz ont esté accoustumez de faire. Mais à cause que la nouelle Compagnie auoit achepté vne bonne quantité de drapes, il fut ordonné, qu'il leur seroit loysible de les faire transporter, en cest interim, à Middlebourg, et de les y debiter. Ce qu'ayants fait; Nous auons entendu que le Bailieu de v^re^ ville les a saisiz; en intention de les faire confisquer comme les biens des Interlopers, dont il n'y a nulle apparence, puis que ces draps y ont esté transportés soubs le bon-gré des Marchands Adventuriers, et au lieu de leur Estaple qui est vostre ville. Ce qui nous fait vous prier de leur en donner main-leuie sans remise ou plus de dispute: en quoy vous ferrez, ce qui convient à l'equitie, et la bonne alliance qui est entre vostre ville et les Royaumes du Roy noster Maistre.

Messieurs Nous prions Dieu, vous donner longue et heureuse vie.

Vous bien affectionez amys.

[1] N. B. In this appendix, I have departed from my usual practice and have not attempted to modernize the spelling.

O

PROCLAMATION OF JAMES I TOUCHING GRIEVANCES

Soc. Ant. Proc. Coll. July 10, 1621.
Brit. Mus. Proc. Coll. [506 h. 12 (87).]

. . . His Highness observing that divers of them (though fit to receive a full period, and determination in Parliament) are very meet and necessary, for the good of his people, to be settled and ordered in the mean time by his own regal authority and direction; and some others are of that quality and condition, as his Majesty needs no assistance of Parliament for reforming the same, and would have reformed them before the Parliament, if the true state of his subjects' grievances had been then made known unto him.

Thereupon his Majesty in this short time of cessation of parliamentary proceedings, not allowing himself any cessation or relaxation from his continual care and watch over the public, upon mature deliberation with his Privy Council hath advised and resolved of sundry particulars tending to the present case of his people, and to the furtherance and advancement of the flourishing estate of this kingdom . . . [matters of justice].

And whereas his Majesty hath received information of sundry grievances lighting upon many of his people and chiefly of the poorer sort, by reason of divers privileges, licenses, and other letters patents procured from his Majesty upon suggestions made to his Highness that the same should tend to the common good and profit of his subjects: Howbeit upon examination it doth appear that many of the said grants were not only obtained upon false and untrue surmises but have been also notoriously abused; his Majesty having heretofore published in print his dislike of such suits, together with his hatred and detestation of all importunities to obtain or procure the same, is willing to manifest: That these abuses and surreptitions against his precise charge and direction have confirmed him in an utter distaste of suits of that nature, and is resolved, by making those patents already obtained from him to be fruitless to

the procurers, to discourage all others hereafter to press or importune him in the like. And therefore his Majesty, discerning that these particular patents ensuing viz:

Of and concerning the making of gold and silver foliat
The licensing of pedlars and petty chapmen
The sole dressing of common arms
The export of lists, shreds, and other like things
The sole making of tobacco pipes
The hot-press
The manufacture of playing cards and
The brogging of wool

have been found of evil consequence, and some of them have been much abused, contrary to his Majesty's gracious intention, and the same being made to appear to the parties interested in these grants, they have voluntarily submitted; which his Highness accepting, hath taken order for the present surrender of the same patents, and doth hereby absolutely forbid all further execution of them or any of them, or of anything in them, or any of them contained, or of any proclamation heretofore published for, or in any sort to the furthering or strengthening of them, or any of them.

Commissions revoked:

Pardoning and dispensing apprenticeship.
Pardoning and dispensing conversion of arable to pasture.
Licensing of wine casks.
Making of denizens.
Granting of leets.
Passing of parks and free warrens.
Granting of fairs and markets.
Granting of tolls, tallages, &c.
Leasing of tithes.
Passing of concealments, intrusions, &c.

And whereas divers other privileges, licenses, and other like patents have passed from his Majesty, as viz: touching

The gilding and printing of leather
Printing upon cloth
The making of paving-tiles, dishes, pots, garden-posts, and vessels of earth
The making of stone pots, stone jugs, and the like

The importing of pikes, carps, eels, and scallops
The making of racket-hoops, rackets, and cloth balls
The making or selling of oil invented for keeping armor
The importation of sturgeon
The making of garments of beaver
The making of hardwax
The making of chamlets
The making of back screens
The making of fortage and lineage of paper
The measuring of corn, coal, and salt
The printing of briefs and other things upon one side of the paper
The weighing of hay and straw

The discovery of annoyances in the Thames, and ballasting ships, his Majesty doth hereby publish and declare his gracious will and pleasure that all and every persons that at any time hereafter shall find themselves grieved, injured, or wronged by reason of any of the said grants, or any clause, article, or thing therein contained, may take their remedy therefor by the common laws of the realm, or other ordinary course of justice, any matter or thing in the said grants to the contrary notwithstanding.

[Provision for wool, cloth, new draperies, and iron ordnance.]

And his Majesty doth by these presents signify and declare his gracious and princely pleasure that albeit he hath in good measure, as the shortness of the time would permit, devised and resolved upon the several remedies above rehearsed, for the care of his subjects; yet it is not his Majesty's purpose that his grace and goodness to his people in matters of like nature should bear no further fruit, but as time and opportunity will permit, he will enlarge and extend the same unto such other particulars, wherein he shall have cause to conceive his subjects may be justly grieved; and that until the sitting again of Parliament both his own and the ears of his Privy Council shall be open to the modest and just complaints of his people as well concerning monopolies and other patents of evil nature and consequences, as concerning other grievances of the public; admonishing, nevertheless, that under color thereof, no man presume to trouble his Majesty or his Council with causeless clamors, proceeding of humor, or private respects. Given at our court, &c. &c.

P

PROCLAMATION OF JAMES I TOUCHING GRIEVANCES

(Soc. Ant. Proc. Coll. Feb. 14, 1623.)

[Refers to his proclamation of July 10, 1621. . . .]

His Majesty continuing the same his gracious and princely disposition, which is not confined unto times and meetings in Parliament, but at all seasons and upon all occasions watcheth over the public weal of his kingdoms hath . . . thought fit again to invite his subjects to embrace his gracious and princely favor for the relieving of them in whatsoever their just grievances, and that in a more easy and ready way than hath been propounded at any time heretofore, not doubting but his loving subjects (well weighing his abundant goodness and care towards them) will apply themselves unto his Majesty for their relief in such modest and temperate course, as may tend to the glory of his government, their own weal and tranquility, and utter abolishing of all those private whisperings and causeless rumors proceeding from particular humors which, without giving his Majesty any opportunity of reformation by particular knowledge of any fault, serve to no other purpose but to occasion and blow abroad discontentment. And therefore his Majesty doth hereby publish and declare that he hath appointed

George, Marquis of Buckingham, lord high admiral of England,
Thomas, Earl of Arundell and Surrey, earl marshal of England,
William, Earl of Pembroke, lord chamberlain of his Majesty's Household,
Launcelot, Bishop of Winchester, and
William, Bishop of St. David,

select and principal persons, authorizing and requiring them, or any two or more of them, to sit once a week, at least, at his Majesty's Palace of Whitehall, to receive the petitions and complaints of his loving subjects concerning their just grievances, and to certify the same to himself or his Privy Council as shall be fittest for due re-

dress: Wherein his Majesty doth declare that as it is not his intent that matters of ordinary nature or consequence should be drawn thither, but left to the proper courts of justice, which have cognizance thereof: So his Majesty doth not restrain their complaints to any particular sort of grievances, but is well pleased that his subjects may freely resort thither for any notable oppression, exaction, bribery, or other grievance, where the quality of the offence, or eminence of the person, or office of the offender may require an extraordinary proceeding. Nevertheless his Majesty doth admonish that under color thereof, no man presume to present there any causeless clamors which if they shall do, they must expect to be punished with the same severity which their complaints aimed and endeavored unjustly to draw on others.

Q

ORDER IN COUNCIL

Directing the preparation of a proclamation revoking certain patents and commissions

(C. R. March 31, 1639.)

According to his Majesty's especial direction, their Lordships, having this day considered of divers grants, licenses, and commissions which have been procured upon untrue suggestions, or which upon experience do prove very burdensome and grievous to the king's subjects; and of other intended grants which have not as yet passed the great seal, have thought fit and ordered that his Majesty's attorney-general shall draw a proclamation for their Lordships to sign for revocation of the commissions, licenses, letters patents, and intended grants following, or for the prohibition of the execution of them as the case shall require, upon which declaration his Majesty's attorney-general is to proceed legally to revoke them.

That is to say

1. A grant for weighing hay and straw in London and Westminster and three miles compass
2. A patent of registration of the commission for bankrupts in divers counties
3. The patent for gauging of red herrings
4. The commission for cottages and inmates
5. The commission for scrivenors and brokers
6. The commission for compounding with offenders for transportation of butter
7. The commission for compounding with offenders touching tobacco
8. The commission for compounding with offenders touching logwood to be brought in
9. The grant for marking of iron
10. The commission to compound for selling of under-sheriffs' places

11. The commission for compounding for destruction of woods in iron-works
12. The patent for sealing of bone lace
13. The grant for marking and gauging butter-casks
14. The commission for concealments and encroachments within 20 miles of London
15. An inhibition to be published that no Englishmen do henceforward take upon them the degree of baronets in Scotland or Nova Scotia
16. A license to transport sheepskins and lambskins
17. The commission to take men bound not to dress venison, partridge, and pheasants in divers alehouses, ordinaries, and taverns
18. Petty corporations to be recalled, such as are not past the great seal, the rest to be prohibited to be executed, and declared that they shall be proceeded against by *quo warranto*, — Comb-makers, Hatband-makers, Gutstring-makers, Butchers, Tobacco-pipe-makers, Horners, Spectacle-makers
19. Corporation of Brick-makers, and all indentures touching the same, to be recalled
20. The licenses to transport English butter to be recalled
21. All grants of fines, penalties, and forfeitures by letters patents, privy seals, or otherwise before judgment, to be recalled
22. The commission for wine-casks to be recalled
23. The commission for cards and dice respited until Michaelmas next
24. The commission for kelp and seaweed, recalled
25. Patent or intended grant for sealing of linen cloth, recalled
26. The patent for gathering of rags, recalled
27. Office of factor for Scottish merchants, recalled
28. All patents for new inventions not put into practice within 3 years after the date of the grant, recalled
29. The proclamation and commission for brewing to be recalled
30. An office and grant for sealing of buttons to be recalled
31. An office and grant for the sole transportation of lamperns to be recalled,

and all proclamations, warrants, and letters of assistance for putting the said grants, licenses, and commissions in execution, to be recalled.

R

PROCLAMATION OF CHARLES I REVOKING CERTAIN PATENTS AND COMMISSIONS

(Soc. Ant. Proc. Coll. April 9, 1639.)

Whereas divers grants, licenses, privileges, and commissions have been procured from his Majesty, some under his great seal of England and some under his privy seal, signet, or sign manual, upon pretences that the same would tend to the common good and profit of his subjects, which since upon experience hath been found prejudicial and inconvenient to his people, contrary to his Majesty's gracious intention in granting the same; And whereas also upon like suggestions, there hath been obtained from his Majesty, the lords, and others of his Privy Council divers warrants and letters of assistance for the execution of those grants, licenses, privileges, and commissions according to his Majesty's good intention and meaning therein.

Forasmuch as his most excellent Majesty (whose royal ear and providence is ever intent on the public good of his people) doth now discern that the particular grants, licenses, and commissions hereafter expressed, have been found in consequence far from those grounds and reasons wherefore they were founded, and in their execution have been notoriously abused, he is now pleased of his mere grace and favor to all his loving subjects (with the advice of his Privy Council) by his regal power to publish and declare the several commissions and licenses hereafter following, whether the same have passed his great seal, privy seal, signet, and sign manual, or any of them, to be from hence utterly void, revoked, and hereby determined

That is to say:—

A commission for cottages and inmates

A commission touching scrivenors and brokers

A commission for compounding with offenders touching tobacco

A commission for compounding with offenders touching butter

A commission for compounding with offenders touching log-wood

A commission for compounding with sheriffs for selling under-sheriffs' places

A commission for compounding with offenders for destruction of woods for iron-works

A commission for concealments and encroachments within 20 miles of London

A license to transport sheep- and lambskins

A commission to take men bound to dress no venison, pheasants, or partridges in inns, alehouses, ordinaries, and taverns

A commission touching licensing of wine-casks

A commission for licensing of brewers

A license for sole transporting of lamperns

and all proclamations, warrants, or letters of assistance for putting in execution of the said commissions or licenses be from henceforth declared void, determined, and hereby revoked to all intents and purposes.

And his Majesty in like favor and ease to his subjects is further pleased to declare his royal will and pleasure to be, that the particular grants hereafter mentioned (upon feigned suggestions, obtained from him, to public damage) whereby the same have passed his Majesty's great seal, privy seal, signet, or sign manual or any of them, shall not hereafter be put in execution viz:—

A grant for weighing of hay and straw in London and Westminster and 3 miles compass

An office of register to the commission for bankrupts in divers counties of the realm

An office or grant for gauging of red herrings

An office or grant for the marking of iron made within the realm

An office or grant for sealing of bone lace

A grant for making and gauging of butter-casks

A grant of privilege touching kelp and seaweed

A grant for sealing of linen cloth

A grant for gathering of rags

An office or grant of factor for Scottish merchants

An office or grant for searching and sealing of foreign hops

A grant for sealing of buttons

All grants of fines, penalties, and forfeitures before judgment granted, or mentioned to be granted, by letters patents, privy seals, signet, sign manual, or otherwise

All patents for new inventions not put in practice within 3 years next after the date of the said grants

And the several grants of incorporation made unto

Hatband-makers

Gutstring-makers

Spectacle-makers

Comb-makers

Tobacco-pipe-makers

Butchers and Horners.

And his Majesty doth further require and command that there shall be a proceeding against the said patentees by *quo warranto* or *scire facias* to recall the said grants and patents, unless they will voluntarily surrender and yield up the same: and also all proclamations, warrants, or letters of assistance obtained from his Majesty or the lords and others of his Privy Council for execution thereof, from henceforth utterly to cease and be determined, and are hereby absolutely revoked and recalled.

And his Majesty doth further expressly charge and command, all and singular the patentees, grantees, or others any ways interested or claiming under the aforenamed grants, licenses, or commissions, or any of them and their deputies, that they or any of them do not at any time hereafter presume to put in use or execution any of the said grants, commissions, or licenses, or any thing therein contained, or any proclamations, warrants, or letters of assistance obtained in that behalf, upon pain of his Majesty's indignation, and to be proceeded against as contemners of his Majesty's royal commands, whereof he will require a strict account.

Given at our Manor of York the 9th of April in the 15th year of our reign, 1639.

S[1]

SIMON STURTEVANT'S METALLICA, OR THE TREATISE OF METALLICA, BRIEFLY COMPREHENDING THE DOCTRINE OF DIVERS NEW METALLICAL INVENTIONS, BUT ESPECIALLY HOW TO ANNEAL, MELT, AND WORK ALL KINDS OF METAL ORES, IRONS, AND STEELS WITH SEA-COAL, PIT-COAL, EARTH-COAL, AND BRUSH FUEL. IMPRINTED AT LONDON BY GEORGE ELD. CUM PRIVILEGIO ANNO 1612, MAY 22.

The Preface to the Reader.

Gentle Reader, I am not ignorant how they that are willing to apprehend and assist new businesses are desirous to be satisfied in these points. First, concerning the perfect and exact knowledge of that invention, wherein they are to deal and negotiate, for as the common proverb saith — "Ignoti nulla cupido." The second is touching the worth and goodness of the business, and how the benefit thereof may be raised. The third is the ability of the inventioner to effect and perform his project propounded. The fourth is concerning the manner of contracting and bargaining; in all which I will endeavor to give the best satisfaction that I may, out of the precepts and grounds of this present *Treatise of Metallica*. And therefore concerning the first point. The transcript of his Majesty's most gracious grant and privilege doth evidently show and inform the reader, that amongst many other inventions granted for one and thirty years, myself, my executors, deputies, and assigns, may only make, practice, and put in use, within any of his Majesty's realms and dominions, the working, melting, and effecting of iron, steel, and other metals with sea-coal and pit-coal; the principal end of which invention is, that the wood and timber of our country might be saved, maintained, and preserved from the great consumption and waste of our common furnaces and iron-mills, which, as they are now ordinarily built and framed, can burn, spend, and consume no other fuel

[1] N. B. This appendix, as well as all which follow, is taken from the reproductions by the Great Seal Patent Office, 1857. . . . Here, however, as elsewhere, I have modernized the spelling.

than charcoal, the which device, if it may be effected accordingly (as I make no doubt but by God's blessing I shall), will prove to be the most profitable business and invention that ever was known or invented in England these many years.

For (to speak nothing of the great benefit and profit which may be raised and made by twenty other inventions comprised and comprehended under the patent), the yearly value of this metal business alone will amount unto 330 thousand pounds per annum, after the second and third year, as appeareth by this calculation.

A calculation showing how the metal invention or art, which maketh all kinds of metals or metallic substance with pit-coal or sea-coal, will be worth per annum 330 thousand pounds immediately after the first two years, which are the allotted times for trials and conformities without any charges (except the charges of trials) to the patentees, partners, assistants, and dealers. There are planted already in England and Wales eight hundred mills for the making of iron, for there are four hundred mills in Surrey, Kent, and Sussex, as the townsmen of Haslemore have testified and numbered unto me; there are also 200 mills in Wales, and 20 in Nottinghamshire, as the author hath been credibly informed.

Now we may well suppose that all England, Scotland, and Ireland (besides the forenamed shires) will make up the number of 180 mills more, being in all 800 mills. Moreover, one mill alone spendeth yearly in charcoal 500 pounds and more, as divers clerks and workmen in the iron business have credibly testified, which in pit-coal will be done with the charges of 30 or 40 pounds after the inventioner's manner and invention, or at the most with 50 pounds, where carriage is far and chargeable.

So that the invention in the 800 iron-mills will save and gain— declaro — the owners of those mills 320 thousand pounds yearly, over and above the ordinary and annual gains, as it appeareth by this proportion.

One mill alone saveth yearly	400 li	Ergo 800 mills save yearly 320 thousand pounds

Again, the said metallic invention, being put and converted to lead, tin, copper, brass, and glass-metal, and all the several minerals of

England, Ireland, Scotland, and Wales, will questionless clear yearly, by means of fuel, above ten thousand pounds more, over and besides the ordinary gains in the said business. So that yearly iron revenues, added unto these other metallic revenues, do amount unto 330 thousand pounds, as was said before.

Now out of these metallic gains of 330 thousand pounds yearly, the owners of the mills, hearths, and furnaces may have and receive liberal rates, and allowed and allotted unto them over and besides their ordinary gains, only in lieu of conforming their furnaces, refineries, and chafferies to this invention of pit-coal and earth-coal. And also the king's most excellent Majesty, the prince his Highness, the Duke of York, the Lord Viscount Rochester, and other parties interested in the patent may, by their composition and agreement with the owners and ironmasters, yearly receive, by way of rents and licenses, the residue of that gain which remaineth over and above that which was allotted and allowed to the ironmasters, for applying of this invention to their ordinary way of making of iron, as more fully shall be specified, shown, and proved in the appendix of this treatise, which I am now preparing for the printer and the press with all convenient speed.

This may suffice, therefore, to give the reader satisfaction concerning the two first points, for the knowledge and worth of the businesses and concerning the manner how certain yearly annuities may be raised to the dealers and assistants.

Now to persuade the third point, that the author is able to effect the work undertaken in as ample manner as he propoundeth, we plead and allege as followeth.

First, the inventioner, by his study, industry, and practice, hath already brought to pass and published divers projects, and new devices, and new projects, as well literal as mechanical, very beneficial to the commonwealth. His literary inventions do appear and are known partly by his printed treatise of *Dibere Adam*, which is a scholastical engine automaton, and partly in divers other manuscripts which he hath to show. His new mechanics already performed are to be seen in the inventions which he called by the names of press-wares, wood pleits, balance, engine, baramyha, and Hubla, of all which in private speech he is ready more largely to confer, and to manifest their truth and goodness at his workhouses at Islington

and Highbury. To conclude, therefore, he doubteth not but (by God's blessing and assistance, semblably with success), to effect his invention of iron-works, as also all his other metallic devices and inventions here contained in the patent or privilege of *Metallica*.

1 Sam. 17, 34. Thus David reasoneth from the bear and lion to Goliath the giant.

Secondly, the consideration of things in the like nature with it, are good inducements to persuade well of this project for brick-making, brewing, dyeing, casting of brass-works, and were (not many years since) done altogether with the fuel of wood and charcoal, instead whereof sea-coal is now used as effectually and to as good a use and purpose.

Again (that which is somewhat nearer the mark) the blacksmith long agone forged all his iron with charcoal (as in some places where they are cheap they continue this course still), but these many years small sea-coal hath and doth serve the turn as well and sufficiently.

Add hereunto, that very lately, by a wind furnace, green glass for windows is made as well by pit-coal at Winchester House in Southwark as it is done in other places with much waste and consuming of infinite store of billets and other wood fuel.

Thirdly, the inventioner hath already experimented and made trial of the chief particular means and instruments of divers cheap ways of making irons in real and substantial models to himself (though in small things according as his means would give him leave). And this of his credit and honesty he avoucheth and protesteth, wherefore he more confidently presumeth to work the same effects in grander instruments and means of trial, after that he hath received allowance of the dealers and assistants for it.

Fourthly, there can be no doubt of performing the matter propounded, if the inventioner can but make or cause sea-coal to become as serviceable for metallic purposes as wood and charcoal are, the art and skill whereof consisteth chiefly in three points. The first is to bring earth-coal to that equality of heat that wood or charcoal hath, that is to say, that it make neither hotter nor colder fire than the wood or charcoal doth. The second means is so to order and prepare pit-coal that all malignant properties which are averse to the nature of metallic substances may be extracted from it, or at least destroyed in it. The third means is the addition and infusion of those deficient properties which, as they are in charcoal, so ought they to be found in pit-coal.

Now this threefold mistery and secret, the author can certainly perform and achieve by the powerful efficacy and means of his dexterous prerogative instruments devised for this purpose, as more at large is shown both in his treatise and the appendix, which very shortly shall come forth, and also shall be further confirmed and justified by his daily experiments and trials, which he will be ready to show to them whom they shall in any way touch or concern, or to them who are otherwise desirous to assist and deal, for the experimenting and accomplishing of these so worthy good businesses. And then also shall they know my purpose for contracting and bargaining by word of mouth, as it is best fitting for private dealings and negotiatings.

And thus (having briefly touched these four promised points) I conclude and shut up this preface of *Metallica*, humbly and unfeignedly beseeching the Lord, who by His Holy Spirit inspired Bezaleel, Aoliah, and Hiram with the light of mechanical inventions, and in all manner of workmanship for His effectual blessings in these our enterprises, that (that) which was begun in His fear, may be prosecuted and fully accomplished and built by His heavenly and helpful hands, to the glory of His name, and for the good welfare and emolument of the king's most excellent Majesty, the church, and the political estate wherein we live. — Amen.

Exod. 31; 1, 2; 2 Cro. 2; 7, 14 Nisi dom. œdificaverit. Psalm 127.

SIMON STURTEVANT.

Metallica

CAPUT I

THE TRANSCRIPT OF HIS MAJESTY'S INDENTURE

Reader. As I understand you have promised and covenanted in your patent more fully and evidently to express and enlarge in a printed treatise to be called *Metallica*, every point and part of your privileged business, to the intent that the reader might the better conceive and judge of the inventions propounded, and might the sooner also be induced to assist and set forward so good and worthy works, first therefore I demand of you by what name and application you entitle that general head, under the which you reduce and comprehend all the several arts and inventions of your patent.

Author. The general, that comprehendeth all the other particular inventions, is called *Metallica*, which is a word derived and deduced from the Greek and Latin words *metallon* and *metallum*, which signifies in English metals, which properly are mineral substances digged out of the earth, of which sort are iron, lead, tin, copper, brass, gold, and silver, &c.

R. 2. Doth your patent of *Metallica* only contain the making of metals by the means of sea-coal and pit-coal, and with your other metallical instruments which you have devised for that purpose?

A. His Majesty's grant is very large and ample, for it doth not only comprehend and privilege the making of all kinds of metals, after the manner prescribed, but also equally authorizeth and licenseth any other mechanical inventions comprehended under the general definition of *Metallica*, which is mentioned in the schedules or manuscript treatise annexed to the patent, which schedules have the same force and validity as his Majesty's indenture, itself.

R. 3. Then that I may know and understand the extent of your privilege, repeat, I pray you, word by word, definition of *Metallica;* as it is written in the said schedules annexed to your patent.

A. Metallica, mentioned in the petition, is thus defined. *Metallica* is an art or invention, showing how divers things and materials, now made and attained unto in a very chargeable sort, after the ordinary way, may be made and attained to after a more cheaper manner, and as with the help of common instruments, so more especially by divers new devised metallical instruments and means.

From these metallical instruments the art is generally called *Metallica.*

R. 4. This summary definition giveth me some general light and understanding into your businesses, but that I may be the more fully satisfied, I pray you rehearse also the tenor of his Majesty's grant as it is under the broad seal of England.

A LETTER PATENT

JAMES R.

This indenture, made the xxix day of February, in the year of the reign of our sovereign Lord James, by the grace of God, King of England, Scotland [*sic*], France, and Ireland the ninth, and of Scot-

land the forty-fifth. Between our said sovereign lord of the one party, and Simon Sturtevant, Gentleman, of the other party.

Whereas the said Simon Sturtevant, by his long study and great charge, hath attained unto divers new exact mechanic arts, misteries, ways, and secrets of his own invention, whereby all kinds of metals, works, and other things and materials, as namely irons, steels, leads, tins, coppers, brasses, and such like— Secondly, all kinds of metallic concoctions, as sand-metals, ash-metals, ammels, and such like — Thirdly, all kinds of burnt earth, as tiles, paving-stones, bricks, and such like — Fourthly, all kinds of press-wares, as pressed tiles, pressed bricks, pressed monions, pressed stones, and such like, with divers other things and materials now made after the ordinary course, with wood fuel and charcoal, may be as well made, wrought, and effected, as the said Simon Sturtevant affirmeth, with sea-coal, pit-coal, earth-coal, and brush fuel, whereby the woods now commonly wasted, in all the chief woodland countries of this realm of England, by iron-mills and such other metallical furnaces and hearths, may be preserved from the great consumption thereof, and saved from like inconvenience in other his Majesty's dominions, all which premises so by this new invention to be made, the said Simon Sturtevant hath undertaken shall be in substance and for use as sufficient and as good as the other like materials now made and wrought with the chargeable and excessive waste of wood and charcoal. And whereas, also, the said Simon Sturtevant, for the better making, working, and effecting, heating, burning, melting the said metals, works, things, and materials, by and with sea-coal, pit-coal, earth-coal, and brush fuel, hath by his said invention and skill, invented divers furnaces, hearths, tests, tools, engines, mills, and other instruments and means, new, and of his own invention, never heretofore used or put in practice by any other; and hath also, by his said inventions and skill, attained to the knowledge how to use and employ divers other common instruments to the making, working, and effecting the said metals, works, materials, and things, which other common instruments have been heretofore and are used in other arts, sciences, and manual occupations, but were not, nor have been as yet, converted, used, or employed to, for, or about the making, working, effecting, and producing the said metals, works, and things, which said skill and

inventions of the said S. Sturtevant, and the said metals, works, things, and other materials, and the means and instruments whereby to work and effect the same, are in some measure mentioned and expressed in the schedule or schedules to these presents annexed, and shall be more fully, amply, and particularly demonstrated, specified, described, and contained in a large treatise, which the said Simon Sturtevant hath already conceived, and shall be put in print, and so published before the last day of Easter term next ensuing the date hereof, which treatise so to be published shall be entitled —*A Treatise of Metallica*, which said invention of the said Simon may and will prove beneficial to the commonwealth, both in regard of the abundant plenty of the said things and materials which it will daily bring forth, as also because it saveth and preserveth abundance of timber, charcoal, and wood fuel, and other things and commodities wastefully consumed and spent, the general want whereof already is felt. And forasmuch as our said sovereign lord is given to understand that this art, skill, industry, and inventions of the said Simon Sturtevant, of making, casting, founding, working, and acquiring of the aforesaid metals, and works of iron, materials, and things by sea-coal, pit-coal, earth-coal, and brush fuel, and all and every, or any of them, and also the making of the said new devised engines, hearths, furnaces, and other means and instruments, and the employing of the said instruments used in other sciences and arts, to the making, working, effecting, and producing the said metals and other works, materials, and things, is a thing not yet practiced, nor brought into any trade, occupation, or mistery, within any of his kingdoms, but is an invention in substance new, and which shall not prejudice or cross any from privilege or grant by his Majesty heretofore made or granted under the great seal of England, for the using and making of any former invention, and therefore fit to be privileged for a certain time, the rather for that his Highness conceiveth that the said inventions and skills may and will become profitable and good for the commonwealth of these realms, and also augment his customs and imposts, in regard it bringeth forth great and abundant store of the aforesaid materials and things, not only for the use of his Highness's realms and dominions here at home, but also for traffic and merchandise into foreign countries abroad, which are customable. In regard whereof,

and also for and in consideration of the good, faithful services heretofore done and performed under his said Majesty by the said Simon Sturtevant, as also to the end that the said Simon Sturtevant may receive some convenient recompense, benefit, and profit for his said services, as also for his studies, labors, and charges in perfecting these inventions to the common good which may ensue hereby to his Highness's realms and dominions.

This indenture witnesseth that our said sovereign lord the king of his especial grace, certain knowledge, and mere motion, and of his prerogative royal, hath given and granted, and by these presents for him, his heirs, and successors, doth give, and grant to the said Simon Sturtevant, his executors, administrators, and assigns, and his and their deputy and deputies, the sole, full, absolute, and free power, liberty, and authority, to make, work, produce, acquire, and bring forth, all kinds of the aforesaid metals, and other the materials and things, by and with sea-coal, pit-coal, earth-fuel, and all, every, and any of them, in all parts and places of his Majesty's realms of England, Scotland, Ireland, and Wales, and also within all the same places and dominions, to make, frame, erect, acquire, and provide, or cause to be made, framed, erected, acquired, and provided, all necessary instruments and means, as namely: All workhouses, furnaces, hearths, mills, structures, engines, vessels, tests, tools, instruments, devices, or things of iron, or other stuff or substance whatsoever, which are already in use in any other trade, mistery, art, or occupation, and as yet not exercised or used in or about the making, working, casting, founding, or acquiring and producing of the said metals and other materials and things, for and to the end and purpose aforesaid, viz.: To make, work, and effect the said metals and other materials and things, by and with sea-coal, pit-coal, earth-coal, and brush fuel, and all, every, or any of them; and also in all the said places and dominions, to make, frame, and erect, use, and employ, or cause to be framed and erected all the said new furnaces, hearths, devices, instruments and means, which are merely of the new invention of the said Simon Sturtevant to, for, in, or about the making, working, casting, founding, acquiring, and producing of the said metals, and other the said materials and things, and to all or any other purpose, use, or uses whatsoever, in as ample sort or manner as they or any of them are de-

scribed, expressed, or mentioned in the schedule to these presents annexed, or shall be more fully demonstrated and specified in the treatise of *Metallica*, which shall be, as aforesaid, printed before the last day of Easter term next ensuing; and our said sovereign lord doth further, by these presents, for him, his heirs, and successors, assign, appoint, ordain, constitute, license, and authorize the said Simon Sturtevant, his executors, administrators, and assigns, to have the sole power, liberty, and authority, by and with sea-coal, pit-coal, and brush fuel, and all, every, and any of them, and by his said inventions, arts, and skills, invented and devised for the making of all kinds of the said metals and materials and things, as workhouses, furnaces, mills, quernes, structures, engines, vessels, tools, instruments, devices, and things heretofore used in any other arts or sciences, to be employed or used in or about the making, working, or producing the said metals, things, and materials, or any of them, as aforesaid, and also to have the sole power, liberty, and authority for the making, framing, erecting, or producing of all the said new devices, instruments, and means metallical, as aforesaid, in what sort or about what things soever the same or any of them shall be used or employed; and that the said Simon Sturtevant, his executors, assigns, administrators, and their deputy and deputies, and none other, without his or their special license or toleration, shall or may make any kind or kinds of the said metals and other the materials and things, by or with sea-coal, pit-coal, earth-coal, and brush fuel, or all, some, or any of them, by means of, or by using and employing the said inventions of the said Simon or any part or parcel of them, or any of them, or make, frame, and erect any the said workhouses, furnaces, hearths, mills, structures, engines, tests, vessels, tools, instruments, devices, and things heretofore used in any other arts or sciences which, by the said inventions of the said Simon, shall be transferred or converted, or turned to be used, exercised, and employed in or about the making, casting, founding, working, acquiring, and producing of the said metals or materials, things, and devices, by or with sea-coal, earth-coal, pit-coal, and brush fuel, or all, some, or any of them, or to make, frame, or erect any of the said devices, instruments, and means of the said Simon, either to the making, casting, or working, or effecting all or any of the said works, metals, or materials, by or with sea-coal, earth-

coal,and brush fuel, or all, some, or any of them, or to any other end or purpose whatsoever; to have and to hold, use, exercise, and enjoy the sole making, casting, founding, working, tempering, acquiring, and producing of all and every the said metals, and other the said premises, in manner and form aforesaid, and to the end and purposes aforesaid, unto the said S. Sturtevant, his executors, administrators, or assigns, and by his and their deputy and deputies, for and during the time and term of 31 years now next coming, immediately from and after the date of these presents, yielding, rendering, and paying therefor yearly, and every year immediately from and after the date hereof, for and during the said term of 31 years, to our said sovereign lord, his heirs, and successors, at the receipt of his Highness's Exchequer at Westminster, always in the term of St. Michael, ten parts of such sum or sums of money and other clear yearly profits, in 33 parts, to be divided as he, the said Simon Sturtevant, his executors, administrators, or assigns, shall yearly have or receive, during the said 31 years now next coming, and by way of composition or otherwise, for or by making, framing, or erecting, casting, founding, and acquiring, or otherwise for licensing or authorizing any person or persons whatsoever to make, frame, cast, erect, found, or acquire, any of the said materials, workhouses, hearths, mills, structures, furnaces, engines, vessels, tests, tools, instruments, devices, and things aforesaid, the charges and expenses in and about the same, and every of them, expended out of the said 33 parts always deducted and allowed to the said Simon Sturtevant, his executors, administrators, and assigns; and likewise, yielding, tendering, and paying unto the most excellent Prince Henry, eldest son of our said sovereign lord, Prince of Wales, Duke of Cornwall, and Earl of Chester, and his executors, or administrators yearly, and every year during the said term of one and thirty years, in the same terms of St. Michael, five parts of the said sum and sums of money, and other clear profits in 33 parts to be divided, to be always paid and delivered to such person or persons as the said most excellent prince shall appoint to receive the same, at his Highness's palace of St. James, in the county of Middlesex; and also yielding, rendering, and paying unto the most high and mighty Prince Charles, Duke of York, second son of our said sovereign lord, unto his executors, and administrators, during

the said term of thirty-one years in the said terms of St. Michael the Archangel, two parts of the said sum and sums of money, and other clear profits aforesaid, in 31 [*sic*] parts to be divided, to be always paid and delivered at the said palace of St. James, to such person or persons as our said sovereign lord the king, during the minority of the said Duke of York, and after his full age, he the said duke shall appoint to receive the same; and moreover, yielding, rendering, and paying unto Robert, Viscount Rochester, Baron of Wainick, his executors, and administrators, in the said terms of St. Michael, one part of the said sum and sums of money and other clear parts to be divided; and as concerning the residue of the said sum and sums of money, and other clear profits to be divided, it shall and may be lawful to and for the said Simon Sturtevant, his executors, administrators, and assigns, to retain and keep one part thereof to his and their discretion, and in such manner and form, and by such rates and proportions as he and they shall, in their discretions, think meet to dispose thereof, and to expend and to distribute the same, and every part and parcel thereof, amongst such person or persons as shall adventure, join, be assisting, aiding, or helping to the advancing or setting forwards of the works and inventions aforesaid, or any of them, and amongst such person or persons as shall be the owners of the said workhouses, furnaces, hearths, mills, structures, engines, vessels, tests, tools, instruments, devices, and things before mentioned, or any of them.

And the said Simon Sturtevant, for him, his heirs, executors, administrators, or assigns, and for every of them, doth covenant and grant, by these presents, to and with our sovereign lord, his heirs and successors, that he, the said Simon Sturtevant, his executors, administrators, or assigns, shall and will yearly, and every year during the said term of one and thirty years, well and truly yield, render, satisfy, content, and pay, or cause to be contented and paid, the said ten parts of the said clear profits, in manner as aforesaid unto our sovereign lord, his heirs, and successors, and shall and will, likewise, during the aforesaid term of one and thirty years, well and truly yield, render, satisfy, content, and pay unto the said Prince of Wales, his executors, or administrators, the said five parts of the said clear profits, in manner and form aforesaid. And also to the said Duke, his executors or administrators, the said two parts of the said clear profits

in manner and form aforesaid. And also to the said Lord Viscount Rochester, his executors or administrators, the said one part of the clear profits in manner and form as the same one part is formerly in these presents appointed to be yielded, rendered, and paid to the said Lord Viscount Rochester, his executors and administrators; and forasmuch as when the said skill, work, and inventions of the said Simon Sturtevant, which hereby his great industry, cost, and expenses hath attained to, shall appear and be made commonly known, it is very likely that many persons will privily of the said Simon Sturtevant, his executors, administrators, or assigns, make, frame, and erect the like, and peradventure having his platform, add thereunto some further new invention for their gains, or otherwise put the same in practice at their pleasure, and make the said metals and other materials and premises aforesaid, thereby reaping the fruits of the labors of the said Simon Sturtevant, and so defraud both our said sovereign lord and the said prince, and the said Duke of York, and the said Lord Viscount Rochester, and also the said S. Sturtevant, his executors, administrators, and assigns, and such others as shall adventure therein, of a great part of the benefit and profit which might otherwise accrue unto our said sovereign lord, and to the said most excellent prince and Duke of York, and to the said other parties, by such skill, work, and invention aforesaid. Our said sovereign lord, therefore, favoring the good endeavors and studies of the said Simon Sturtevant in the premises, and his former service done unto his Highness, for him, his heirs, and successors, for the better encouragement of him the said Simon Sturtevant, his executors, administrators, and assigns, in the same, and the better to enable him to undergo and bear the burden and charge thereof, and to avoid all deceit that any way may hinder our said sovereign lord, or the said most excellent prince, or Duke of York, or any of the said parties aforesaid, doth by these presents declare and signify, that his Majesty's royal will and pleasure is, and our sovereign lord doth hereby straightly will and command all and every person or persons of what state, degree, or condition soever, that they nor any of them, during the said term of one and thirty years, shall not presume nor attempt by any art, device, skill, or cunning, directly or indirectly, without the special license, allowance, and consent of him the said Simon Sturtevant, his executors, administrators, or assigns, or of his or their deputy or deputies, there-

unto by him or them lawfully authorized, to make, frame, erect, contrive, or perform any kind or kinds of the aforesaid metals, and the other materials and things, or any of them, by or with sea-coal, earth-coal, and brush fuel, and all or any of them, or any of the said new devised instruments and things, either to or about the making or working the said metals, things, and materials as aforesaid, or to any end or purpose whatsoever, or to do any act or thing whereby, or by means whereof, our said sovereign lord the king, or the said most excellent Prince of Wales, or the said Duke of York, or the said Simon Sturtevant, his executors, administrators, or assigns, or other the said parties, shall or may sustain any prejudice, loss, or detriment, in the said inventions or works, or in any profit or commodity which they or any of them may or might otherwise receive or enjoy by means of the said inventions or works, or any of them, upon pain of the high displeasure of our said sovereign lord the king, and upon pain of imprisonment of their bodies, and forfeitures of all and every the said materials, instruments, and things aforesaid, which shall be wrought, framed, and made by any person or persons contrary to the tenor of these presents and royal prohibition therein, with such further penalties, pains, and forfeitures, as by the law and statutes of the said realms can or may be inflicted upon them, or any of them, for their willful and obstinate disobedience and contempt of his Highness's commandment and prerogative royal. And if it shall happen that any person or persons contemptuously neglecting this his Majesty's will and pleasure in these presents declared, after notice thereof given, shall make or acquire any kind or kinds of the aforesaid metals, and other the materials and things, by or with sea-coal, pit-coal, earth-coal, and brush fuel, or all, some, or any of them, by any of the said means or inventions, or any part or parcel of them, or any of them, or shall frame, work, erect, use, or employ any such or the like engines, instruments, tools, for and to the purposes aforesaid, the same and all and every of them shall be taken and seized, by the constable or other officer dwelling nearest thereunto, to and for the only use and behoof of our said sovereign lord the king, his heirs, and successors; and further, our said sovereign lord the king, of his abundant grace, certain knowledge, and mere motion, doth by these presents, for him, his heirs, and successors, give and grant full power and authority to the said Simon Sturtevant, his executors,

administrators, and assigns, and his and their deputy and deputies, and every of them, with the assistance of a constable, tithing-man, headborough, or any other ordinary officer in any city, town, place, or places, as well within the liberties as without, within the said realm and dominions, at all and every time and times, to have access and entry into any house, place, and places where such metals and other the premises shall be made and wrought or otherwise laid up contrary to his Majesty's grant, and there to search and provide and see that during the period of 31 years, no manner of such or the like inventions, works, or practices of making or erecting any kind or kinds of the said metals and other the premises to be made, wrought, sold, used, or employed within the said realms contrary to the true meaning of these presents, and by all lawful and convenient ways and means, to search, see, examine, and find out all offences, during the said time, that shall be committed contrary to any grant, license, authority, and commandment, prohibition, or other things in these presents mentioned, specified, and to seize as aforesaid such instruments and other things aforesaid whatsoever made, framed, or erected, used, exercised, or occupied contrary to the true intent of these presents or any clause herein contained. And his Highness's will and pleasure is, and by these presents for him, his heirs, and successors, his Majesty doth straightly charge and command all justices of peace, mayors, sheriffs, bailiffs, constables, and all other officers, ministers, and subjects of his Highness, his heirs, and successors for the time being, that they and every of them, during the said term of 31 years, or the duplicate, exemplification, or the enrollment thereof, shall be aiding and assisting to the said S. Sturtevant, his executors, administrators, assigns, and deputies, and every of them, in the due execution of all and every the said grants, authorities, commandments, licenses, privileges, inhibitions, prohibitions, and every other thing in these presents mentioned and specified, or any of them: Provided always, that this indenture, not anything, nor anything therein contained, shall extend or be construed to extend to restrain or hinder any person or persons from exercising any of their own inventions, or arts heretofore exercised, put in use, or privileged by any of his Majesty's letters patents heretofore made and granted to them or any of them, but that it shall and may be lawful to and for all and every the said person and persons to exercise, use, and put in prac-

tice all and every the said inventions heretofore practiced, put in use, exercised, and privileged by any of the said letters patents to them or any of them made or granted, in as ample sort and manner as they might or may exercise, practice, or use the same, if these presents had never been had or made, anything in these presents to the contrary notwithstanding. In witness whereof, to the one part of the indentures with the said Simon Sturtevant, our said sovereign lord, the king's Majesty, hath caused the great seal of England to be put, and to the other part thereof remaining with our said sovereign lord the king, the said Simon Sturtevant hath put his seal.

Given the day and year first above written.

Exam. HENRY HUBBERS.

The Docquet to the Patent

This is your Majesty's part of the Indentures whereby your Highness doth grant license and privilege unto Simon Sturtevant, Gentleman, that he, his executors, deputies, and assigns only and none other, shall and may, during the term of 31 years, make, practice, and put in use, within any of your Majesty's realms and dominions, certain inventions, furnaces, and instruments devised and invented by himself, for the working and effecting with sea-coal, pit-coal, earth-coal, and brush fuel, divers things and works done heretofore with wood fuel, as namely, irons, steels, leads, tins, coppers, brasses, glass-metals, mines, tiles, bricks, pottery-ware, and such like. And there is reserved to your Majesty upon this grant ten parts in thirty-three parts, to be divided of the clear yearly profits that shall be made by the said inventions; and to the Prince, his Highness, five of these parts, and to the Duke of York, two of those parts, and to the Lord Viscount Rochester, one of those parts; and to the said S. Sturtevant one or other of those parts, and to the disbursers of the money for the trial and effecting of the said inventions fourteen such parts, and the declaration and discovering of this invention is partly set down in a certain schedule which is to be annexed to these indentures. And the full and plain manifestation thereof is to be set forth in print by the said Simon Sturtevant before the last day of Easter term next, and containeth a proviso that this grant shall not cross any former grant heretofore made to any others. And is done upon signification

given unto Christopher Perkins, Knight, of your Majesty's good pleasure in that behalf.

Exam. HENRY HUBBERS.

It is his Majesty's pleasure that these do pass by immediate warrant.

ROBERT SALISBURY.

Received 29 of February, 1611.

An Indenture between the king's Majesty and S. Sturtevant.

COPPIN.

[The remainder, called *The Manuscript Treatise of Metallica*, is a professed explanation of the author's several inventions.]

T

DUDLEY'S PATENT FOR IRON, 1621

James, by the grace of God, etc., to all to whom these presents shall come, greeting.

Whereas our right trusty and well beloved Edward Lord Dudley hath, at his great travail and industry, and after many chargeable experiments, found out "the mistery, art, way, and means of melting iron ore, and of making the same into cast works or bars with sea-coals or pit-coals in furnaces with bellows, of as good condition as hath been heretofore made of charcoal," a work and invention not formerly performed by any within this our kingdom of England, we, graciously favoring and willing to cherish such ingenious and profitable inventions, and finding that the working and making of the said iron by the means aforesaid in this kingdom will not only in itself tend to the public good thereof, but also thereby the great expense and waste of timber and wood converted into charcoal and consumed upon iron-works will be much abated and the remnant of wood and timber within this land will be much preserved and increased, of the want whereof not only ourself in respect of provision for our shipping and otherwise, but also our subjects for many necessary uses are very sensible, and holding it agreeable to justice that the authors of so laudable and useful inventions should in some measure reap the fruits of their studies, labors, and charges,

Know ye, that we, for the causes aforesaid, and other good considerations us hereunto moving, of our special grace, certain knowledge, and mere motion, have given and granted, and by these presents, for us, our heirs, and successors, do give and grant unto the said Edward Lord Dudley, his executors, administrators, and assigns, full and free liberty, license, power, and authority, that they and every of them, by him or themselves, or his or their deputies, factors, servants, or workmen, at his and their charges, shall and may, at all and every time and times, and from time to time during the term of fourteen years next ensuing the date hereof, use, exercise, practice,

and put in use within this our realm of England and the dominion of Wales, at his and their liberty and pleasure, the said mistery, art, way, and means, of making of iron ore and of making the same into cast works or bars with sea-coals or pit-coals in furnaces with bellows, and also to make, erect, and set up in any place or places within the said realm and dominion, or either of them, any furnace or furnaces, engine or engines whatsoever, concerning the said mistery, way, art, and means of melting of iron ore with sea-coals or pit-coals, and of making the same into cast works or bars as aforesaid, and the same iron so cast and made to utter and sell in gross or retail or otherwise, to do away at his and their free will and pleasure, and to his and their best commodity and profit. And further, to the end this our pleasure may be the better effected, and that the said Lord Dudley, his executors, administrators, and assigns, may the more fully enjoy the benefit of this our grant, we will, and for us, our heirs, and successors, do straightly charge, inhibit, and command, and do also, of our more especial grace, certain knowledge, and mere motion, for us, our heirs, and successors, grant to the same Edward Lord Dudley, his executors, administrators, and assigns, that no person whatsoever, being within any our realms or dominions, nor any other person or persons, either denizens or strangers born in any foreign realm or country whatsoever, of what estate, degree, or condition he or they be or shall be, other than the said Lord Dudley, his executors, administrators, and assigns, or such as shall be by him or them set on work or authorized, shall or may at any time or times during the said term of fourteen years hereby granted or mentioned or intended to be granted, practice, exercise, or put in use, or any way counterfeit the said mistery, art, way, or means of melting of iron ore, and of making the same into cast works or bars, with sea-coals or pit-coals in furnaces with bellows, or any furnace or furnaces, engine or engines concerning the same, within this our realm of England, or the dominion of Wales, or any place or places in them or either of them, upon pain of forfeiture to us, our heirs, and successors, of the ore and iron so to be melted or made contrary to the true intent and meaning of these presents, and to have the said furnaces, engines, and devices utterly pulled down and defaced; and also upon pain of our high indignation and displeasure, and such further penalties, punishments, and imprisonments as by any laws or statutes of this

our realm can or may be inflicted or imposed upon the offenders for their disobedience in contemning our royal command; and also for the better execution of this our grant, we do by these our letters patents, for us, our heirs, and successors, give and grant full power, liberty, and authority to the said Edward Lord Dudley, his executors, administrators, and assigns, that he or they, by himself or themselves, or his or their deputies, factors, servants, or assigns, shall and may, at all time or times convenient, and from time to time during the said term of fourteen years, with the assistance of a constable or some other officer, enter into all place or places convenient, where he or they or any of them shall have any just cause to suspect any such ore, iron, or engines, or instruments, melted or used contrary to the true meaning hereof, to be or remain within this our realm of England, and the dominion of Wales, or either of them, as well within liberties, as without, and there carefully and diligently to try and search by all lawful ways and means for all such ore and iron furnaces, engines, and instruments, as by any person or persons whatsoever shall, during or within the said term before granted, be melted, made, erected, set up, or used contrary to the tenor and true meaning of these our letters patents, and, finding any such, to seize the ores and iron so melted and made to the use of us, our heirs, and successors, and to deface and pull down the said furnaces, engines, and instruments so erected and used. And further, that he, the said Edward Lord Dudley, his executors, administrators, and assigns, do carefully and diligently endeavor themselves that the intent and meaning of these our letters patents be diligently observed, and if in the execution thereof he or they shall find any resistance that he or they shall certify the same into the Court of Exchequer of us, our heirs, and successors, to the end the offenders therein may receive condign punishment for the same their offences; unto which Court of Exchequer we do hereby, for us, our heirs, and successors, give power and authority upon such certificate as aforesaid, and due proof thereof, to inflict such punishment and imprisonment, or either of them, upon the offenders as their offences shall deserve and to the said court shall be thought meet. And we do also by these presents for us, our heirs, and successors, will and command all and singular mayors, justices of peace, bailiffs, constables, headboroughs, and other officers, ministers, and subjects whatsoever of us, our heirs, and successors, that they

and every of them, be, from time to time, during the term aforesaid, aiding and assisting to the said Edward Lord Dudley, his executors, administrators, deputies, assigns, servants, and workmen, in all things in or about the accomplishment of our pleasure expressed in these our letters patents, and in the exercise and execution of the same or any article or clause therein contained, and that they, nor any of them, do any way hinder, molest, interrupt, or let the said Edward Lord Dudley, his executors, administrators, assigns, deputies, servants, workmen, or chapmen, or any of them, concerning the premises, as they tender our pleasure and will avoid the contrary at their perils; and these presents, or the enrollment thereof shall be their sufficient warrant and discharge in that behalf; provided always, and our will and pleasure is, that this our present grant and privilege, or anything therein contained, shall not in any wise extend or be construed to extend to the prejudice of any other person or persons concerning any other grant or privilege heretofore made by us or any of our progenitors or predecessors, kings or queens of England, now in force for melting of iron ore or making of iron or any iron-works; provided also that if it shall appear unto us, our heirs, or successors, or to the Privy Council of us, our heirs, or successors, at any time hereafter, that this our present grant and privilege is or shall be inconvenient to the commonwealth, that then, upon signification of the pleasure of us, our heirs, or successors, under our or their sign manual, signet, or privy seal, or upon signification under the hands of any six or more of the Council of us, our heirs, or successors, for the time being, these presents, and every grant, clause, article, and thing therein contained shall cease, determine, and be utterly void and of none effect, anything before in these presents contained to the contrary notwithstanding, although express mention, &c.

In witness whereof, &c., witness ourself at Westminster, the two and twentieth day of February.

Per breve de privato sigillo, &c.

U

PATENT TO HORSEY, RAMSEY, FOULKE, AND DUDLEY FOR IRON, 1638

Charles, by the grace of God, King of England, France, and Ireland, Defender of the faith, &c., to all to whom these presents shall come, greeting.

Whereas our beloved subjects, Sir George Horsey, Knight, David Ramsey, Roger Foulke, and Dud Dudley, Esquires, by their humble petition to us lately exhibited, have informed us that there have been divers that have attempted to make iron within this our kingdom of England with sea-coals, pit-coals, peat, and turf, but never obtained unto by any, saving them, the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, who have effected it, and with bellows, wind blast, and additaments, and by art to perfect the same to make iron and cast works, and also into bars, whereof they have made many trials and much good iron, and are now assured to make the same in great quantity. And whereas we are also by the said petition further informed that there is much coals and ironstone lost and destroyed in many works of this kingdom aforesaid by overthrowing and overrunning the same, which are fit for the making of the said iron, and may be regained and hereafter preserved; and the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley doubt not to discover mines royal, and other mines holding several metals; they have, therefore, humbly besought us to grant unto them our letters patents of privilege for "the making of iron with sea- or pit-coal, peat, or turf, as above said, and with the same to roast, melt, or refine all metals of what nature soever," for the term of fourteen years, with the like powers, privileges, and advantages as are usually granted in our letters patents for mines royal; and that we will be further graciously pleased to grant to them liberty to dig, search, and work the said mines in any lands or grounds, giving the owners such satisfaction as shall be adjudged by two justices of peace adjoining. In con-

sideration whereof, they have humbly offered to pay into our Exchequer after the first two years, one hundred marks per annum.

Know ye, that we graciously favoring and accepting the good endeavors of our said subjects, of our especial grace, certain knowledge, and mere motion, have given and granted, and by these presents for us, our heirs, and successors, do give and grant unto them, the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, their executors, administrators, and assigns, full, free, and absolute license, power, privilege, and authority, that the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, and every of them, they and every of their executors, administrators, and assigns, and they and every of their deputies and substitutes, servants, agents, and workmen, and none other person or persons whomsoever, shall and may from time to time and at all and every time and times hereafter during the term of years hereafter mentioned, at their and every of their wills and pleasures, use, exercise, practice, and put in use within our said kingdom of England and Wales, according to their and every of their own way and invention, the sole making of iron into any sort of cast works with sea- or pit-coals, peat, or turf, and with the same to make the said iron into plate works or bars, and likewise to refine all sorts of metals, at their and every of their wills and pleasures, for their and every of their best profit and advantage. Wherefore our will and pleasure is, and we do hereby, for us, our heirs, and successors, straightly charge and command, prohibit and forbid all and every other person and persons whomsoever of what estate, degree, or condition soever he, they, or any of them shall be, that none of them (other than the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, their executors, administrators, deputies, substitutes, workmen, or assigns) do or shall, during the term of years hereinafter mentioned, directly or indirectly use or exercise the making of iron into any sort of cast works, with sea- or pit-coals, peat, or turf, or with the same to make the said iron into plate works or bars, or to refine any sort of metals in our said kingdom or dominion, after the manner and way by them, the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, or any of them, first invented, without the special license and consent of them, the said Sir George Horsey, David Ramsey, Roger Foulke,

and Dud Dudley, their executors, administrators, or assigns, first had and obtained; to have, hold, exercise, and enjoy the said licenses, privileges, powers, and authorities, and other the premises before by these presents granted or mentioned to be granted, from the date of these presents, unto the full end and term, and for and during the full term and time of fourteen years from thence next ensuing, and fully to be complete and ended, yielding and paying therefor. And the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, for themselves, and every of them, their and every of their executors, administrators, and assigns, and for every of them, do hereby covenant and promise to and with us, our heirs, and successors, by these presents, to yield and pay during the said term unto us, our heirs, and successors, the yearly rent of one hundred marks of good and lawful money of England, at the receipt of the Exchequer of us, our heirs, and successors of this our kingdom of England, at the feasts of St. Michael the Archangel, and the Annunciation of the blessed Virgin Mary, by even and equal portions; the first payment thereof to begin at the feast of St. Michael the Archangel, which shall be in the year of our Lord God one thousand six hundred and forty. And for the better accomplishment of the premises aforesaid, we do by these presents give full power and authority to them, the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, their executors, administrators, and assigns, and every of them, with the assistance of a constable or other officer, at all convenient time and times, to search in all place or places, house or houses in our kingdom or dominion aforesaid, where any just cause of suspicion shall be, for discovery of such as shall use or exercise the making of iron into any sorts of cast works, with sea- or pit-coals, peat, or turf, or with the same to make iron into plate works or bars, or to refine any sort of metals, contrary to our will and pleasure herein declared, and the true intent and meaning of these presents, to the end the delinquents may be discovered and receive condign punishment, according to their demerits. And we do also by these presents will, require, and command all and singular mayors, sheriffs, justices of peace, bailiffs, constables, headboroughs, and other officers, ministers, and subjects of us, our heirs, and successors, of our said kingdom and dominion, whom the same shall concern, that they and every of them be from time

to time during the term aforesaid, aiding, helping, furthering, and assisting to them, the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, and every of them, their executors, administrators, deputies, agents, workmen, and assigns, and every of them, in all things in [or] about the accomplishment of our pleasure herein declared, and in the exercise and execution of this our grant; and that they nor any of them do in any wise hinder or interrupt them, or any of them, concerning the same as they tender our pleasure, and will avoid the contrary at their perils, and these presents, or the enrollment thereof, shall be their sufficient warrant in that behalf. And further know ye, that we of our more especial grace, certain knowledge, mere motion, do also by these presents, for us, our heirs, and successors, give and grant unto the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, their executors, administrators, and assigns, full and free liberty, license, power, privilege, and authority, at all times and from time to time during the term of years hereafter in these presents mentioned, by themselves, or they or any of their deputies, servants, or workmen, or any of them, to dig, open, search, and work, wash, roast, and stamp, and melt all manner of ores or mines of gold, silver, copper, lead holding silver, or mixed with silver and quicksilver, or any of them, within our said kingdom or dominion aforesaid or any part thereof, and for that end and purpose to drain and convey any waters out of or to the said mines for the better working and draining of the mines and pits, or washing of the same, and to try out and convert the said ores, and copper, lead, into any other metal whatsoever, and to refine and extract the silver or gold therein contained, and the said copper and lead to reduce and make into any manufactures whatsoever, to their, and every of their most profit and commodity, and to set up and erect and repair any house or houses, edifices, buildings, mills, and works, for the use and service of the said mines and mineral works, as well within our own manors, lordships, lands, grounds, and possessions, as also within the grounds, lands, and possessions of every or any of our subjects, set, lying, or being within our said kingdom and dominion, or any part thereof, so that the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, their executors, administrators, or assigns, shall not by color hereof search or dig, open or work for, in the said

mines or ores aforesaid, within any our manors, lordships, forests, chases, parks, or any other our lands, grounds, or possessions within our kingdom or dominion aforesaid, or the lordships, manors, lands, grounds, or any the possessions belonging to any our subjects within our said kingdom or dominion, without the good will and consent of us, our heirs, and successors, and the good will of such of the subjects of us, our heirs, and successors, as have power to license them so to do; and also except and always reserved out of these presents all royal mines, and all other mines whatsoever, in any place or places wheresoever within our said kingdom or dominion, by any the grants or letters patents of us, or any of our progenitors or predecessors, kings or queens of this our kingdom of England, to any person or persons whomsoever formerly granted, and every of them, with all the privileges, profits, and immunities, to them and every of them appertaining and belonging, according to the true intent and meaning of the same; to have and to hold the said mines of gold and silver, copper, lead holding silver, or mixed with silver, quicksilver, and all other metal or ores holding gold or silver, as aforesaid, and all and singular other the premises, with their and every of their appurtenances respectively, under the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, their executors, administrators, and assigns, from the date of these presents for and during and unto the full end term of one and twenty [*sic*] years from thence next ensuing, and fully to complete and ended, yielding and paying therefore yearly and every year. And the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, for themselves, their executors, administrators, and assigns, and for every of them, do covenant, promise, and grant to and with us, our heirs, and successors, to yield and pay yearly and every year, after the first two years of the said term hereby granted shall be expired, one full tenth part of all such silver and gold whatsoever, as shall be had or gotten out of the said mines, the same being first refined and reduced into their several species at the proper costs and charges of the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, their executors, administrators, or assigns, as aforesaid; and the same tenth part to be yearly and every year after the said first two years, so expired as aforesaid, accounted for upon oath thereof to be made before one or more of the barons

of our Exchequer for the time being, at feast of St. Michael the Archangel only, or within thirty days next after; and upon such account, so made and declared as aforesaid, the said tenth part to be delivered to our use in such manner as shall be appointed by the lord treasurer or chancellor of the Exchequer of us, our heirs, or successors for the time being. And our will and pleasure is, and we do hereby declare our intent and meaning to be that the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, their executors, administrators, and assigns, shall make, give, and allow reasonable recompense, satisfaction, and amends to all and every the lords, owners, and occupiers of the lands, ground, and soil for the damage and loss to be sustained in and upon the same grounds, land, and soil, where any such shall happen by reason or means of the said mines or mineral works: And in case the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, their executors, administrators, and assigns, and the lords, owners, and occupiers of the said lands, grounds, and soil, cannot agree among themselves for the said damages and loss respectively aforesaid, then our will and pleasure is, and we do hereby declare and appoint, that four indifferent men of the same shire or shires in which such loss and damages shall be suffered, or of the shire or county next adjoining, at the pleasure of the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, their executors, administrators, and assigns, to be elected between them,whereof the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, their executors, administrators, or assigns, shall nominate two, and the said lord, owner, or occupier of the said soil shall nominate other two, shall assess and rate the recompense of or for the same as they in their consciences shall adjudge to be reasonable and sufficient in that behalf; and in case it shall so happen that the said four men so indifferently elected, as aforesaid, cannot agree in the rating and assessing of the recompense aforesaid, then the matter shall be brought before us, our heirs, or successors, and by us or our Privy Council to be heard, and finally determined between them. And for the better furtherance of the same several works respectively, we do by these presents, for us, our heirs, and successors, give and grant unto the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, their executors, ad-

ministrators, and assigns, and every of them, full power, license, and authority to take up and hire at reasonable wages and prices to be given in that behalf in any place or places within this our realm of England and dominion of Wales, all manner of artificers, laborers, and workmen not at that time hired or employed in any other of our mines royal, and all manner of corn and victuals, timber, wood, underwood, coal, turfs, peats, fuel, horses, oxen, carts, carriages, tools, and instruments, and to have convenient ways and free passages with ingress, egress, and regress for servants, workmen, horses, oxen, carts, and carriages, with all necessaries whatsoever, into, through, and from all manner of grounds through which it shall be convenient and expedient for their better ease, and the good and benefit of the said several and respective works as aforesaid, and shall be fit and convenient to be occupied and employed in or about the draining all manner of grounds through which it should be convenient for the better ease and the good and benefit of the said several and respective works, as aforesaid, as shall be fit and convenient to be occupied and employed about the draining and conveying of waters, digging, opening, washing, stamping, roasting, and melting out the mines and ores aforesaid, paying reasonably for the same, and upon any difference for the prices thereof, to be determined in such sort as is in like case before in these presents limited and appointed for recompense to be given to the lords, owners, or occupiers of the soil, as aforesaid. And our further will and pleasure is, and the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, for themselves, their executors, administrators, and assigns, and for every of them, do by these presents covenant, promise, and agree to and with us, our heirs, and successors, that they and every of them shall and will, every six months, after the two first years of the said term of one and twenty [*sic*] years hereby granted shall be expired as aforesaid, bring and deliver, or cause to be brought and delivered, into the mint of us, our heirs, and successors, in our Tower of London, or elsewhere within this our realm of England, all the gold and silver which shall be found in the said mines, or any of them, they and every of them receiving upon the delivery thereof such price in ready money as gold and silver of the like fineness is worth and shall be then usually given for the like. And for the more secure and safe conveyance of the said gold and

silver into our mint, as aforesaid, our will and pleasure is, and we do by these presents, for us, our heirs, and successors, give and grant unto the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, their executors, administrators, and assigns, and every of them, full and free liberty, power, and authority, at all times and from time to time during the said term hereby granted after the first two years shall be so expired as aforesaid, to set and stamp, or cause to be set and stamped, our arms upon all the gold and silver to be conveyed to our mint as aforesaid, thereby to distinguish it from other gold and silver, and to make known that the same is especially appointed for us and for our service. And to the intent as well the said tenth part of the said gold and silver refined and reduced into their several species aforesaid as the said tenth part may from time to time hereafter be to us, our heirs, and successors, duly answered, paid, and delivered according to the true meaning of these presents as aforesaid, our will and pleasure is, and the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, for themselves, their executors, administrators, and assigns, and for every of them, do covenant, promise, and agree, to and with us, our heirs, and successors, that they, and every of them, in the said works shall and will, once in every year, according to the tenor and true meaning of these presents, that is to say, at the feast of St. Michael the Archangel yearly, or within thirty days next after the same feast, render and yield up a true and just account, upon oath, before one or more of the barons of the Exchequer of us, our heirs, and successors, for the time being, according to the course of the said court, of all such gold and silver as shall be then had or gotten out of the said mines as aforesaid, and thereupon shall and will deliver one full tenth part thereof, refined and reduced into their several species as aforesaid to our use, in such manner as by our treasurer of England, or the chancellor and under-treasurer of our Exchequer for the time being shall be appointed in that behalf; provided always, that if the said yearly rent or sum of one hundred marks to us, our heirs, and successors, before, in, and by these presents reserved as aforesaid, shall happen to be behind and unpaid by the space of forty days next after either of the said feasts, in which the same ought to be paid as aforesaid; or, if the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley,

or any of them, they or any of their executors, administrators, or assigns, shall not enroll or cause to be enrolled this our present grant before the clerk of the Pipe for the time being of our kingdom aforesaid within the space of six months after the date of these presents, that then the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, their executors, administrators, and assigns, shall forfeit and pay unto us, our heirs, and successors, as well the sum of twenty pounds of current money for every month in which the said rent shall happen to be behind and unpaid next after the said forty days, as aforesaid; and also the sum of twenty pounds in name of a pain for every six months' default of the enrollment of these presents before the said clerk of the Pipe as aforesaid. And lastly, if at any time during the said term of fourteen years, it shall appear unto us, our heirs, or successors, or unto the lords and others of our Privy Council, that this our grant concerning the privilege aforesaid shall be inconvenient or prejudicial to the commonwealth, then upon signification and declaration to be made by us, our heirs, or successors, or by the lords and others of our Privy Council, or six of them for the time being, in writing under their hands, of such prejudice or inconvenience, these our letters patents as to the privilege shall forthwith cease, determine, and be utterly void and of none effect, anything in these presents contained to the contrary thereof in any wise notwithstanding. And lastly, we will and by these presents for us, our heirs, and successors, do grant that these our letters patents, or the enrollment thereof, shall be and shall be taken, adjudged, construed, and deemed to be firm, good, effectual, and available in the law, to the intents and purposes aforesaid; and that the same shall be taken, adjudged, pleaded, and allowed most strongly against us, our heirs, and successors, and most benignly and beneficially to and for the said Sir George Horsey, David Ramsey, Roger Foulke, and Dud Dudley, their executors, administrators, and assigns, as well in any of our courts of record as elsewhere, within this our realm of England and domain of Wales, according to the true intent and meaning of the same, notwithstanding the not reciting or not true or certain reciting of the shires, counties, or any other place or places, in which the said mines within our kingdom and dominion aforesaid are to be found; and notwithstanding the not reciting of any proclamation or pro-

clamations heretofore by us, or our late royal father published, touching or concerning the premises, or any part thereof; and notwithstanding any grant or grants heretofore made by our said late father or the late Queen Elizabeth, or by us, or any matter or thing whatsoever contained in the said grant or grants, or any of them; and notwithstanding any statute or statutes, act, ordinance, provision, or restriction, or any other defect in not rightly naming the names, kinds, quantities, or qualities of the said premises, or any part thereof, or any other incertainty, defect, imperfection, or any other matter or thing whatosever to the contrary hereof in any wise notwithstanding. Although express mention, &c. In witness, &c. Witness ourself at Westminster, the second day of May.

Per breve de privato sigillo, &c.

W

PATENT TO JONES AND PALMER FOR HARD AND SOFT SOAP, 1623

James, by the grace of God, &c., to all to whom these presents shall come, greeting.

Whereas we, by our letters patents, bearing date the tenth day of February now last past, for the considerations therein expressed, for us, our heirs, and successors, did give and grant unto our well beloved subjects Roger Jones and Andrew Palmer, their executors, administrators, and assigns, full and free liberty, license, power, privilege, and authority that they, the said Roger Jones and Andrew Palmer, their executors, administrators, and assigns, and none other, by themselves, their deputies, servants, factors, or workmen, should or might at all and every time and times thereafter, and from time to time, during the term of twenty and one years next ensuing the date of the said letters patents, at their own proper costs and charges, use, exercise, practice, and put in use within our said realms of England and Ireland, and dominion of Wales, and our town of Berwick, at their liberty and pleasure, the mistery, art, way, means, and trade of "making of hard soap with the material called barilla, and without the use of any fire in the boiling and making thereof, and also of making of soft soap without the use of fire in the boiling thereof," with such privileges and clauses as in said letters patents are contained and may more at large appear: And whereas since the granting of the said letters patents the said Roger Jones and Andrew Palmer, and such others, their assistants, as by great expense and travail have aided and assisted them in perfecting the said invention, have found out and added to their former invention many particulars conducing much to the profitableness and perfection of the work, both in the use of native and home commodities of this kingdom in the working and composition of the said soaps, and thereby in sparing and saving many thousands yearly which are now expended on foreign commodities bought and brought from beyond the seas, and employed here in the making of soap in the manner

now ordinarily used; and especially the said Roger Jones and Andrew Palmer and their assistants have found out the way of making and preparing of ashes of bean-straw and pea-straw, and of inland kelp and English barilla, and other vegetables fit and serviceable for the making of soap which otherwise would be of little or no benefit to the kingdom, but being thus used and employed will save the expense of many thousands yearly which are now expended on foreign commodities to the lessening of the stock and treasure of the realms, which in our regal prudence for the public weal of our people we are bound to be vigilant and careful of. Forasmuch as such profitable inventions are not at once and at the first brought to their full perfection, we hold it fit in justice and honor to give all encouragement to such our loving subjects as shall employ their travails, industries, and purses to the furthering of the common good, and to reward them to the full with the fruits of their own labors; and forasmuch also as the said Roger Jones and Andrew Palmer have now approved their inventions and skill to be such as deserveth encouragement, their soap, made [ ] the material of our own kingdom only, being found to be as sweet and good as the best soft soap now already made, and to extend further in the use thereof, as they in the behalf of themselves and their assistants have also made offer unto us to respect our own particular profit, in such measure as that the loss we may receive in our customs and other duties by the not importing of foreign commodities for the making of soap as in former times, shall by their industries be recommended unto us, our heirs, and successors, in certainty with good advantage; and our loving subjects, who have long complained of the bad and stinking soap now ordinarily in use, shall have good, sweet, and serviceable soap for their money, and yet shall not have the price thereof raised upon them above the usual rate of the best sweet soap now made and sold by the soap-boilers.

Know ye, that we, for the considerations aforesaid, of our especial grace, certain knowledge, and mere motion, have given and granted, and by these presents, for us, our heirs, and successors, do give and grant unto the said Roger Jones and Andrew Palmer on the behalf of themselves and their assistants, full and free liberty, license, power, privilege, and authority that they, the said Roger Jones and Andrew Palmer, their executors, administrators, and assigns, by themselves or their deputies, servants, factors, or workmen, and none

other, shall and may at all and every time and times hereafter, and from time to time during the term of twenty and one years next ensuing the date of these presents, at their own proper costs and charges, use, exercise, practice, and put in use, within our said realms of England and Ireland and dominion of Wales, and our town of Berwick, at their liberty and pleasure, the mistery, art, way, and means of making of hard soap and soft soap, as well with the materials and in such manner as in the said former letters patents are expressed, as also of burning and preparing of bean-straw, pea-straw, kelp, fern, and other vegetables to be found in our own dominions, into ordinary ashes or into potashes, and with the said materials of the ashes of bean- or pea-straw, and kelp, fern, and all other vegetables whatsoever not formerly and ordinarily used or practiced within these our realms and dominions to make soap hard or soft, at their will and pleasure, and in such way or form as they have invented or devised; and also of the using of the assay glass for trying of their lye and making of hard and soft soap by their said new inventions, in the way of making of the said soaps by sundry motions, and not boiling of the same with the expense of much fuel, in such sort as was formerly accustomed by such as now usually make soap in and about our city of London and elsewhere in our said dominions; and further, to set up in any place or places within our said realms of England and Ireland, and dominion of Wales, or town of Berwick, any house or houses, vessels, or engines whatsoever fit and necessary for the putting in use and practice of the said mistery, art, way, means, or trade of making of hard and soft soap by all or any the materials aforesaid, and by their said new inventions and motions for the making thereof as aforesaid, and the same so made to utter and sell in gross or by retail or otherwise to transport, and do away at their free will and pleasure for their best commodity and profit; and to the end that this our pleasure may be the better effected, and the said Roger Jones and Andrew Palmer may the more fully enjoy the benefit of this our grant, we will, and for us, our heirs, and successors, do straightly charge, inhibit, and command, and do also of our especial grace, certain knowledge, and mere motion, for us, our heirs, and successors, grant to the said Roger Jones and Andrew Palmer, their executors, administrators, and assigns, that no person or persons whatsoever born within any our realms or dominions, nor any other

person or persons whatsoever, either denizens or strangers born in any foreign realm or country whatsoever, of what estate, degree, or condition soever he or they be or shall be, other than the said Roger Jones and Andrew Palmer, their executors, administrators, and assigns, or such as shall by them or some of them be set on work or authorized, shall or may, at any time or times during the said term of one and twenty years hereby granted or mentioned, or intended to be granted, practice, use, exercise, or put in use the said mistery, art, way, means, or trade of making the said hard or soft soaps with any the materials aforesaid, or by using of the assay glass for trying of their lye, or by the ways, inventions, or means hereinbefore mentioned, or to set up, make, or use any house or houses, vessels, engine or engines, for or concerning the use of the said arts, misteries, or inventions, or any of them, within our said realms of England and Ireland and dominion of Wales, or town of Berwick, or in any place or places within our said realms or dominions, or any of them, or to make or burn any ashes or potashes of the materials aforesaid for the making of soap upon pain of forfeiture to us, our heirs, and successors, of the said hard soap and soft soap or ashes so to be made contrary to the true intent and meaning of these presents, and to have the said assay glass or glasses for trying their lye, and the said vessels, engines, and devices utterly pulled down and defaced, and also upon pain of our high indignation and displeasure, and such further pains, penalties, and imprisonments as by any our laws or statutes of this our realm of England, or by our prerogative royal, can or may be inflicted upon the offenders for their disobedience in contemning our royal commands in this behalf. And to the end it may the better appear when any such soap shall be made contrary to the true intent and meaning of these presents and for the better execution of this our grant, we do by these presents, for us, our heirs, and successors, give and grant full liberty, power, and authority unto the said Roger Jones and Andrew Palmer, their executors, administrators, and assigns, that a stamp or stamps, seal or seals, to be engraven with a rose and crown, shall be stamped, sealed, or marked on all the soaps by them or any of them to be made in manner and form before declared, the better to distinguish their said soap from all counterfeit soap, either hard or soft, made or to be made by any person or persons contrary to the true intent and meaning of these presents or of

the letters patents before recited, which seal or stamp so to be made as aforesaid we do by these presents will and command be set upon the hard soap, and upon the firkins, barrels, and other vessels containing the said soft soap so to be made, and shall not be set upon soaps hard or soft made by any other person or persons whatsoever contrary to the true intent of these presents, but shall be set and fixed only upon such soap as shall be from time to time made by the said Roger Jones and Andrew Palmer, their executors, administrators, or assigns, according as is hereinbefore set down, and no other; and further, we do by these presents grant that it shall and may be lawful to and for the said Roger Jones and Andrew Palmer, their executors, administrators, or assigns, or any of them, by himself or themselves, or by his, their, or any of their deputies, factors, or servants, at any time or times convenient, and from time to time during the said term of one and twenty years, with assistance of a constable or some other officer, to enter into all and every place and places, house and houses, where they or any of them shall have any just cause to suspect any such hard soap or soft soap, or soap-ashes, or potashes, to be made or endeavored to be made or stamped or sealed, or to be sold or uttered or set to sale, contrary to the true intent and meaning of these presents or of the letters patents before recited, or any vessels, engines, or instruments to be erected, framed, or used contrary to the true meaning hereof, to be or remain within our said realms or dominion, as well within liberties as without, and there carefully and diligently to try and search by all lawful ways and means for all such hard soaps and soft soaps and potashes and other ashes, hereby granted, made, or to be made as aforesaid, and for all such vessels, engines, or instruments as by any other person or persons whatsoever shall, during or within the term before granted, be made, erected, or set up, or used, contrary to the true meaning of these our letters patents, and finding any such, to seize the said hard soaps and soft soaps, and potashes, and other ashes hereby granted so made to the use of us, our heirs, and successors, the one half whereof we do hereby for us, our heirs, and successors, give and grant unto the said Roger Jones and Andrew Palmer, their executors, administrators, and assigns, and to deface and pull down the said furnaces, vessels, engines, and instruments so erected and used; to have and to hold, perceive, use, exercise, and enjoy all and singular the aforesaid liberties, privileges,

grants, and authorities and other the premises, unto the said Roger Jones and Andrew Palmer, their executors, administrators, and assigns, immediately from and after the date of these presents, for and during the term of twenty and one years from thence next ensuing, and fully to be complete and ended. And forasmuch as the public having an interest herein, which by the enhancing of the prices of the commodities aforesaid may be prejudiced and damnified, our will and pleasure is, and we do hereby straightly charge and command that they the said Roger Jones and Andrew Palmer, their executors, administrators, and assigns, or any other person or persons by them to be authorized for the making of the said hard soap or soft soap, shall not, at any time during the said term of one and twenty years, sell, or cause to be sold, the said hard soap or soft soap, by them or any of them to be made as aforesaid, at any higher or dearer rates and prices than hard soap and soft soap of the best sorts and kinds were most usually sold for, within the space of seven years now last past before the date of these presents. And further, we do hereby charge and command all and singular justices of peace, mayors, sheriffs, constables, headboroughs, comptrollers, customers, searchers, waiters, and all other officers and ministers to whom it shall or may appertain, to be aiding and assisting in all lawful and convenient manner unto the said Roger Jones and Andrew Palmer, their executors, administrators, deputies, and assigns, in the due execution of these our letters patents as they tender our pleasure and will avoid our indignation and displeasure in the contrary. And we do further hereby command that the said Roger Jones and Andrew Palmer, their executors, administrators, and assigns, do carefully and diligently endeavor themselves that the intent and true meaning of these our letters patents be justly observed, and if in the execution thereof they or any of them shall find any resistance, that they or some of them do certify the same into the Court of Exchequer of us, our heirs, and successors, to the end the offenders therein may receive condign punishment for the same their offences, unto which Court of Exchequer we do hereby, for us, our heirs, and successors, give power and authority, upon such certificate made as aforesaid, and due proof thereof made, to inflict such punishment and imprisonment, or either of them, upon the offenders, as their offences shall deserve, or to the said court shall be thought meet. And lastly,

we do hereby, for us, our heirs, and successors, grant that these our letters patents, or the enrollment thereof, shall be in all things firm, good, available, and effectual in the law, according to the true meaning of the same, as well in our courts as elsewhere within our said realms and dominions, without any confirmation or further license or toleration to be in any wise procured or obtained, although express mention, &c.

In witness whereof, &c. Witness ourself at Westminster, the three and twentieth day of February.

Per breve de privato sigillo, &c.

Y

PATENT TO SIR ROBERT MANSELL, FOR GLASS, 1624

James, by the grace of God, &c.

To all to whom these presents shall come, greeting.

Whereas, in and by our letters patents sealed with our great seal of England, bearing date at Westminster, the nineteenth day of January, in the twelfth year of our reign of England, France, and Ireland, and of Scotland the eight and fortieth, it is (amongst other things) mentioned that we, taking into our consideration the daily waste and decay of timber and wood within our realms of England and Wales and the dominions of the same, insomuch as where, thentofore, this our kingdom was furnished and adorned with goodly quantities of the same, not only for the navies and inhabitants thereof, for their continual use and comfort, and for store and provision against all occasions and accidents, but also to serve and supply foreign parts with the same in great plenty, and that then of late contrariwise the continual consumption of the same, and that many times in superfluous and unnecessary things, did both increase intolerably the rates and prices of timber, wood, and fuel, in an excessive and unreasonable manner, and also threaten an utter want and scarcity thereof, so much that then our subjects of this kingdom of late years had been forced to use timber, firewood, and fuel brought from foreign parts, whereby great damage in time to come did grow to our realm and subjects of this kingdom for want of necessary provision, as well for making and repairing of ships (being the principal defence of this our kingdom) as also for convenient buildings and firewood in all places, if convenient remedy, according to the good policy of state, were not in time provided. And that we were therefore moved out of our especial care of the future good of this our kingdom, not only to make provision for the preservation and increase of timber and wood by good laws and ordinances, but also to embrace all profitable and beneficial devices, projects, and inventions that might tend to the furthering thereof, so that per-

ceiving glass-works and working of glasses with timber and wood to be one of the greatest and chiefest means to consume and destroy timber and wood. Whereas, thentofore we had given and granted license unto Sir Jerome Bowes, Knight, within our realms of England and Ireland to use the art and feat of making drinking-glasses and other glasses for a certain time and term in the said recited letters patents expressed, and thereby had prohibited all others to make the said glasses, upon the express proviso and condition that we, our heirs, and successors, might frustrate, determine, and make void the said recited letters patents of license in such case as in the same letters patents is expressed. And that afterwards, by our letters patents under the great seal of England, we did also give and grant the like license to make drinking-glasses and other glasses unto Sir Percival Hart, Knight, and Edward Foncett, Esquire, from the expiration or determination of the said Sir Jerome Bowes his patent, for and during the term and space of one and twenty years thence next ensuing. And that also by the like letters patents under our great seal of England we did grant license unto Edward Salter, Esquire, to use the art of making all manner of drinking-glasses and other glasses and glass-works not prohibited by the former letters patents, as by the said several letters patents appeared. And it is also in and by our said letters patents, bearing date the said nineteenth day of January, in the said twelfth year of our reign of England, mentioned that we then lately having certain notice and perfect knowledge that the said several recited letters patents of licenses were grown very hurtful and prejudicial unto this our realm, there being then lately presented unto us by Thomas Percival, Esquire, a project of new invention for the making of all manner of glasses with pit-coal and other fuel, not being timber or wood, nor made of timber and wood, which we had then been slow to believe until, at the great charge of the said Thomas Percival, the same was brought to perfection, as plainly appeared by manifest and demonstrative experience in and by the several furnaces then lately erected and built by the said first inventor, Thomas Percival, and his partners. And it is further mentioned in and by the said letters patents, bearing date the said nineteenth day of January, that forasmuch as the use and exercise of the liberty and authority, by the said three former recited letters patents mentioned to be granted,

were grown hurtful and prejudicial to the commonweal, and the prejudice of them was likely daily to increase unless some provision thereof were made, whereupon the said letters patents were become void in law, and to be overthrown by ordinary course of law in such cases used. We did by the same letters patents, bearing date the said nineteenth day of January, express and declare that we did not purpose to take upon us the defence or protection of any the said letters patents, or of anything in any of them mentioned to be granted; and that such course should, from time to time, be had and used against all persons that should take upon them to use or exercise any power, privilege, or liberty, by pretext or color of any the said letters patents, as our laws in such case should permit and require, with this, that for the preservation of wood and timber we did purpose to take such course for the general restraint of our people from the making of glass with wood or timber as should be agreeable to the good of our people and the state of the commonwealth. And it is also mentioned in and by our said letters patents, bearing date the said nineteenth day of January, in the said twelfth year of our reign of England, that we (for the considerations therein expressed) did give and grant unto our right trusty and right well beloved cousin, Philip Earl of Montgomery, and to our right trusty and right well beloved cousin, Thomas Viscount Andever, by the name of our trusty and well beloved subject and servant Sir Thomas Hayward, Knight, and to our trusty and well beloved subjects and servants Sir Robert Mansell, Knight, Sir Edward Zouch, Knight, Sir Thomas Tracy, Knight, Thomas Hayes, Esquire, Bevis Thelwall, Thomas Percival, and Robert Kellaway, their deputies, and assigns, full and free license, power, privilege, and authority, that they and every of them, their and every of their executors, administrators, assigns, deputies, servants, workmen, factors, and agents, should and might, from time to time, and at all times thereafter during the term and space of one and twenty years next and immediately ensuing the date of the said letters patents, at their and every of their wills and pleasures, use, exercise, practice, set up, and put in use the art, mistery, and feat of melting and making of all manner of drinking-glasses, broad glasses, window-glasses, looking-glasses, and all other kind of glass, glasses, bugles, bottles, vials, or vessels whatsoever made of glass,

of any fashion, stuff, matter, or metal whatsoever thentofore used and thenafter to be devised or used in this our realm of England and Wales, and the dominions thereof, or elsewhere, with sea-coal, pit-coal, or any other fuel whatsoever, not being timber or wood, nor made of timber or wood, in and throughout this our realm of England and Wales, and the dominions thereof, and within every or any part of the same, and elsewhere within any of our kingdoms and dominions, yielding and paying therefor yearly during the said term and time of one and twenty years unto us, our heirs, and successors, the annual or yearly rent, farm, or sum of one thousand pounds of lawful money of England; and it is also mentioned in our said letters patents, bearing date the said nineteenth day of January, that we did thereby grant that no person or persons whatsoever, other than the said Philip Earl of Montgomery, Sir Thomas Hayward, Sir Robert Mansell, Sir Edward Zouch, Sir Thomas Tracy, Thomas Hayes, Bevis Thelwall, Thomas Percival, and Robert Kellaway, their executors, administrators, deputies, assigns, agents, factors, and servants, should, at any time thereafter during the said term of one and twenty years, import or bring into our said realm of England and Wales, or the dominions thereof, or to any part or parcel thereof, out of or from any realm or foreign part any manner or kind of glass or glasses whatsoever before in the said letters patents mentioned, of what metal, stuff, or fashion soever they were, nor directly or indirectly buy or contract for any kind or sort of glass made beyond the sea, or in any place out of this realm of England and Wales, or the dominions thereof, nor sell or utter any such, as by the said letters patents amongst divers grants, powers, privileges, and other things therein contained more at large appeareth.

Now, forasmuch as the said Sir Robert Mansell by agreement and contract with the rest of the said patentees, taking upon himself the exercise and execution of the said letters patents of privilege, was charged and burdened with the payment not only of the said yearly rent of one thousand pounds, but with sundry other great yearly payments unto divers others that were interested in the said patent of privilege, all which payments did amount unto, in the whole, the sum of two thousand and eight hundred pounds by the year at the least, and in respect thereof could not utter and sell

the glasses made by virtue of the said patent of privilege for such moderate prices as was fitting for our subjects, and in respect thereof, and because all importation of glass made, as well in any other of our own dominions as in the dominions of any foreign princes or states, was by the said letters patents of privilege prohibited and restrained, the said letters patents of privilege, bearing date the said nineteenth day of January, did grow hurtful and prejudicial to the commonweal, and accordingly the same were complained of in the last convention of Parliament as a grievance so as the said letters patents bearing date the said nineteenth day of January, in respect of the prejudice thereby accruing to the commonwealth are become void in law, and to be overthrown by the ordinary course of law in such cases used.

Know ye, that we, taking the premises into our gracious and princely consideration, do hereby declare that insomuch as the said letters patents bearing date the said nineteenth day of January, and other the letters patents before mentioned and recited, did become prejudicial to the public, and the execution of them grievous to our loving subjects, that we will not hereafter take upon us the defence or protection of any the said letters patents, or of anything in any of them mentioned to be granted. And that such course shall and may from time to time be had and used against all persons that shall hereafter take upon them to use or exercise any power, privilege, or liberty, by pretext or color of any the said letters patents, as our laws in such case shall permit or require; and yet nevertheless, upon deliberate advice with the lords and others of our Privy Council, and at the humble petition of the said Sir Robert Mansell, setting forth that the making of glass of all kinds within this kingdom with sea-coal and pit-coal was brought to a full and exact perfection for the use and good of our kingdom with the expense of his whole fortune, and upon due consideration of the many and faithful services of the said Sir Robert Mansell, and finding by the petitions and certificates of the glass-sellers, looking-glass-makers, glaziers, and spectacle-makers in and near our city of London, made and certified, some of them to the Commons in the last convention of Parliament, and the rest unto the lords commissioners by us appointed to take consideration of the business of glass-works, that the glass made by the said Sir Robert Mansell was perfectly good, clear,

merchantable, or rather better glass than formerly was made with wood, and that there was sufficient store made not only to serve England, but also to serve other countries if need were; we are pleased and resolved and do hold it most requisite and necessary for the good and benefit of this realm, that the making of glass with sea-coal and pit-coal be continued, and that all making of glass with wood for ever hereafter shall cease, and the privilege for sole making thereof with sea-coal and pit-coal shall be renewed to the said Sir Robert Mansell, not only as a token of our grace and favor towards him for his many and well deserving services, but as a recompense for the great charge and expense which for upholding and bringing of that work to full perfection he hath disbursed, to the weakening of his estate, but yet without any restraint of the importation of foreign glass, and without burden of rent or otherwise which might occasion the enhancing of prices to our subjects, whereby all just grievances shall be taken away by our own loss of the annual rent, which upon the said former letters patents was reserved unto us. Know ye further, that we, as well for and in consideration of the good and faithful service done unto us by the said Sir Robert Mansell, our vice-admiral of England, as also of the great pains, charges, hazard, disbursement, and expense of great sums of money and other detriments which the said Sir Robert Mansell hath undergone and been at, in and about the said work of making of glass with sea-coal, and for other good causes and considerations as hereunto moving, of our especial grace, certain knowledge, and mere motion, have given and granted, and by these presents, for us, our heirs, and successors, do give and grant unto the said Sir Robert Mansell, his executors, administrators, and assigns, full and free liberty, license, power, and authority, that he, the said Sir Robert Mansell, his executors, administrators, assigns, deputies, servants, workmen, factors, and agents, shall and may from time to time and at all times hereafter during the term of years hereafter in these presents mentioned, at his and their and every of their wills and pleasure, use, exercise, practice, set up, and put in use the art, feat, and mistery of melting and making of all manner of drinking-glasses, broad glasses, window-glasses, looking-glasses, and all other kind of glass, glasses, bugles, bottles, vials, or vessels whatsoever made of glass of any

fashion, stuff, matter, or metal whatsoever heretofore used or hereafter to be devised or used in this our realm of England and Wales, and the dominions thereof, or elsewhere, with sea-coal, pit-coal, or of any other fuel whatsoever, not being timber or wood, nor being made of timber or wood, in and throughout this our realm of England and Wales, and the dominions thereof, and within every or any part of them or any of them, and to make, erect, and set up as many furnaces, engines, structures, and devices for that intent and purpose and in as many places of our said realm and dominions as he or they shall think fit, agreeing with the owners of the soil for the same; and the glass and glasses, bugles, bottles, vials, and vessels so made to utter or sell in gross, or by retail, or otherwise to do away at his, and their, or any of their, free will and pleasure, to his, and their, profit and commodity during all the said term hereinafter mentioned: And that he, the said Sir Robert Mansell, his executors, administrators, and assigns, and his and their deputies, servants, workmen, and agents, having license from the said Sir Robert Mansell, his executors, administrators, or assigns, shall and may from time to time during the said term have and enjoy the sole trade of making and melting all manner of drinking-glasses, broad glasses, window-glasses, looking-glasses, and all other kinds of glass, glasses, bugles, bottles, vials, or vessels in form aforesaid, and that no other during the said term shall or may use or practice the art or feat of making or melting of any glass with timber or wood, nor with pit-coal or sea-coal, or other fuel, not being timber or wood, nor made of timber or wood; to have, hold, use, exercise, practice, and put in use the said license, liberty, privilege, authority, and immunity, of and for melting and making of all and all manner of drinking-glasses, broad glasses, window-glasses, looking-glasses, and all other kind of glass, glasses, bugles, bottles, vials, and vessels whatsoever with sea-coal, pit-coal, and other fuel, not being timber or wood, nor made of timber or wood, in all parts and places within our said kingdom and dominions, unto the said Sir Robert Mansell, his executors, administrators, deputies, and assigns, and their, and every of their, servants, workmen, factors, and agents, for and during the whole term, and to the full end and determination of fifteen years next ensuing the date of these our letters patents fully to be complete and ended, freely and absolutely, without any rent, account, sum,

or sums, of money, reckoning, allowance, or any other thing whatsoever, to us, our heirs, or successors, to be therefor paid, made, given, answered, or done, in any manner of wise. And to the end the said Sir Robert Mansell, his executors and assigns, may receive, perceive, and have, such benefit, profit, and commodity, as we intend unto them, by this our grant, and as the perfection of so great a work with such care and hazard deserveth, and for the better encouraging of him and them to reduce the said business to a further perfection, we do hereby expressly declare and signify our royal pleasure to be, and we do strictly charge, inhibit, and command, all and every other, our loving subjects, and all and every other person and persons of what estate, degree, or condition they, or any of them be, that they presume not nor attempt by any art, act, or device whatsoever, directly or indirectly, to make any manner or kind of drinking-glasses, broad glasses, window-glasses, looking-glasses, or any other kind of glass, glasses, bugles, bottles, vials, or vessels whatsoever, made of glass, as aforesaid, with sea-coal, pit-coal, or any other fuel, not being timber or wood, nor made of timber or wood, at any time during the said term without the special consent and license in writing of the said Sir Robert Mansell, his executors, administrators, or assigns, but that the full and whole benefit and profit of making of all and all kinds of glass and glasses whatsoever, as aforesaid, with pit-coal, sea-coal, and other fuel, not being timber or wood, nor made of timber or wood, within every part of our said kingdom and dominions, shall be and remain during all the said time and term to the sole and only behoof, disposition, and use of the said Sir Robert Mansell, his executors, administrators, deputies, and assigns, and to none other person or persons whatsoever. And we do further by these presents straightly charge, command, and prohibit, and do signify our royal will and pleasure to be, that no person or persons whatsoever, of what estate, degree, or condition soever they, or any of them, be, other than the said Sir Robert Mansell, his executors, administrators, deputies, and assigns, and such as shall be licensed, authorized, and set on work by him or them, or any of them, do, shall, or may, at any time hereafter, during the term of years before mentioned, practice, erect, or set up, by any ways or means, the said art and feat of making of any kind of glass or glasses, bugles, bottles, vials, or vessels whatsoever,

or any furnace or furnaces for making thereof within our said kingdom and dominions upon pain of our heavy displeasure and due punishment for the contempt of our royal command in that behalf. And we do by these presents give and grant unto the said Sir Robert Mansell, his executors, administrators, and assigns, deputies, factors, and agents, and every of them, full power, liberty, and authority, from time to time, and at all times during the said term, by all lawful ways and means, to search, try, and find out all offences and acts committed and done contrary to the true intent and meaning of these our letters patents, and likewise for us, our heirs, and successors, we do hereby of our especial grace, certain knowledge, and mere motion, give and grant unto the said Sir Robert Mansell, his executors, administrators, deputies, assigns, factors, agents, and servants, free power, liberty, license, and authority to utter and sell in gross or by retail such kind of glass or glasses, before mentioned, as shall be made by virtue of these our letters patents. And if he or they shall have more than will serve us and the subjects of us, our heirs, and successors, that then he, and they, and such others as shall buy the glasses made as aforesaid of him or them or any of them, to transport and carry over into foreign parts, so many and so much thereof as they shall think fit, paying unto us, our heirs, and successors, the customs due to be paid for the same, and leaving sufficient quantity for us, our heirs, and successors, and our or their subjects at reasonable prices. And we do further, for us, our heirs, and successors, will and grant by these presents that our treasurer, chancellor, and barons of the Exchequer for the time being, or any of them, by force of this our grant, or the enrollment thereof in our Court of Exchequer from time to time and at all times hereafter during the said term upon the request of the said Sir Robert Mansell, his executors, administrators, assigns, or agents, shall grant, make, and direct under the seal of our said Court of Exchequer such and so many writ and writs, close or patent, unto such mayors, bailiffs, sheriffs, customers, comptrollers, searchers, and other officers of us, our heirs, and successors, in such shires, counties, cities, towns, boroughs, and other places whatsoever within our said realm of England and Wales and the dominions thereof, as the said Sir Robert Mansell, his executors, or assigns, shall at any time and from time to time require, thereby charging

and commanding the said officers and every of them diligently and carefully to inquire, try, search, and find out all and every person and persons as, contrary to the true intent and meaning of these our letters patents, shall, at any time during the said term, make, utter, or sell any such kind of glasses whatsoever hereinbefore mentioned, or build, make, erect, use, or set up, or cause to be builded, made, erected, or set up, any such furnace or furnaces, structures, engines, or devices, for the melting or making of any the sorts or kinds of glass or glasses before mentioned until they understand the pleasure of our said treasurer, chancellor, and barons of our said Court of Exchequer in that behalf, and further order by them taken therein. And we do hereby, for us, our heirs, and successors, will and command the treasurer, chancellor, and barons of the Exchequer for the time being, and every of them, that they, or any of them, upon complaint made by the said Sir Robert Mansell, his executors, administrators, or assigns in that behalf, do all that in justice they may, as well for the demolishing of the said furnaces, structures, engines, and devices, set up or devised contrary to the true intent of these presents, as for the apprehension and lawful punishment of such as shall offend against any part of these our letters patents. And for the better execution of this our grant, we do hereby, for us, our heirs, and successors, give and grant full power, license, and authority unto the said Sir Robert Mansell, his executors, deputies, and assigns, by himself or themselves, or his or their agents, factors, or servants, with the assistance of some officer appointed for preservation of the peace, to enter into any glass-house or glass-houses, and other place or places whatsoever, within any part of any of our kingdoms and dominions, as well within liberties as without, where any such furnaces, structures, engines, or devices shall be made or set up contrary to the true intent of these presents, or where any glasses made contrary to the privilege hereby granted shall probably and reasonably be suspected to be, and there by all lawful ways and convenient means to try and search for all and all manner and kind of any the glass or glasses before in these our letters patents mentioned, and glass-works erected or made in any part of our said kingdom or dominions to be bought or sold contrary to the true intent and meaning of these our letters patents, or to any law, proclamation, ordinance,

or statute in that behalf made or ordained, or to be made or ordained, and if upon search they shall find any such glass or glasses made, or any glass-work or furnace built or erected contrary to the true intent and meaning of these presents, that then, with all convenient speed he or they do signify the same to us, our heirs, or successors, or to the treasurer, chancellor, and barons of our Exchequer or any of them for further order to be taken therein as shall appertain: And further that he and they, and every of them, do carefully and diligently labor and endeavor that the true intent and meaning of these our letters patents may be truly observed; and if in execution thereof he or they, or any of them, shall find any resistance, then to certify the same unto our said Court of Exchequer to the end the offenders therein may receive condign and deserved punishment for their several offences, and we do further hereby straightly charge and command all mayors, sheriffs, justices of peace, bailiffs, constables, offices, and ministers, and all other the subjects of us, our heirs, and successors, to be aiding and assisting unto the said Sir Robert Mansell, his executors, administrators, deputies, assigns, factors, and workmen, in all reasonable things concerning the accomplishment of these our letters patents, and that they or any of them do not at any time or times hinder, molest, interrupt, or disturb the execution thereof, as they tender our heavy displeasure and will avoid our indignation. And we do likewise charge the attorney-general of us, our heirs, and successors for the time being, to be aiding and assisting to the said Sir Robert Mansell, his executors, administrators, and assigns, in the maintaining and upholding of this our grant and privilege, and in complaining against such as shall withstand or impugn the same, whereby they may be censured and punished according to justice; and these our letters patents or the enrollment of them shall be their sufficient warrant and discharge in that behalf; provided always, and our will and pleasure is, that this our present grant or anything therein contained shall not extend or be construed to extend to debar, hinder, or let any person or persons whatsoever to import or bring, or cause to be imported or brought into this our realm of England and the dominion of Wales, and there to utter, sell, and dispose of any glass or glasses of what kind or sort soever made within our realm of Scotland or in any foreign parts beyond

the seas, but that it shall be lawful for all person and persons to import into, and utter, and sell within the said realm of England and dominion of Wales, or any of them, or any part of them, any glass or glasses whatsoever made within the said realm of Scotland, or any foreign parts as aforesaid, anything in these presents contained to the contrary in any wise notwithstanding; paying nevertheless unto us, our heirs, and successors, such customs, subsidies, impositions, and other duties as shall be due and payable for the said glass and glasses so to be imported, at the time of the importation of the same. And lastly, we do by these presents, for us, our heirs, and successors, of our further especial grace and favor, grant unto the said Sir Robert Mansell, his executors, administrators, and assigns, that these our letters patents or the enrollment of them shall be taken, construed, and adjudged in all and every our courts of justice and elsewhere to be most available for the said Sir Robert Mansell his executors, administrators, and assigns, against us, our heirs, and successors, notwithstanding the not describing the certainty of the form of the furnaces, structures, engines, and devices to be used for the melting and making of all manner of drinking-glasses, broad glasses, window-glasses, looking-glasses, or any other kind of glass, glasses, bugles, bottles, vials, or vessels, whatsoever, and notwithstanding the not particular naming, or misnaming of the kind or manner of glasses to be made by virtue of this our grant, or the sizes or scantling of the same, and notwithstanding any other defects and uncertainties in the same; any statute, law, provision, proclamation, or restraint to the contrary, and although express mention, &c.

In witness whereof, &c.

Witness ourself at Westminster, the two and twentieth day of May.

Per breve de privato sigillo, &c.

Z

EXTENSION OF THE PATENT TO MANSELL FOR GLASS, 1634

This indenture made the first day of March, in the tenth year of the reign of our sovereign lord Charles, by the grace of God, King of England, Scotland, France, and Ireland, Defender of the Faith, &c., between our said sovereign lord the king, of the one part, and Sir Robert Mansell, Knight, lieutenant of the Admiralty of England, of the other part: Whereas his Majesty's late dear father, King James, of happy memory, by his letters patents, sealed with the great seal of England, bearing date at Westminster the two and twentieth day of May, in the one and twentieth year of his reign of England, France, and Ireland, and of Scotland, the six and fiftieth, as well to prevent the decay and great consumption of wood in this kingdom, occasioned in part by the making of glass with this sort of fuel, as in consideration of the good and faithful service done to his said late father by the said Sir Robert Mansell, and of the great pains, charges, hazard, disbursement, and expense of great sums of money and other detriment which the said Sir Robert Mansell had undergone and been at, in and about a new invention for the making of all manner of glasses with sea-coal and other fuel, not being timber or wood, nor made of timber or wood, and for other good causes and considerations him thereunto moving, of his special grace, certain knowledge, and mere motion, did give and grant, for him, his heirs, and successors, unto the said Sir Robert Mansell, his executors, administrators, and assigns, full and free liberty, license, power, and authority that he the said Sir Robert Mansell, his executors, administrators, assigns, deputies, servants, workmen, factors, and agents, should and might, from time to time and at all times thenafter during the term of years in the said letters patents mentioned, at his and their and every of their wills and pleasures, use, exercise, practice, set up, and put in use the art, feat, and mistery of melting and making of all manner of drinking-glasses, broad glasses, win-

dow-glasses, looking-glasses, and all other kinds of glass, glasses, bugles, bottles, vials, or vessels whatsoever made of glass, of any fashion, stuff, matter, or metal whatsoever thentofore used or thenafter to be devised or used in the realm of England and Wales and the dominions thereof or elsewhere, with sea-coal, pit-coal, or any other fuel whatsoever, not being timber or wood, nor being made of timber or wood, in and throughout the realm of England and Wales and the dominions thereof, and within every or any part of them or any of them, and to make, erect, and set up as many furnaces, engines, structures, and devices for that intent and purpose, and in as many places of the said realm of England and dominions thereof as he or they should think fit, agreeing with the owners of the soil for the same, to utter or sell in gross or by retail, or otherwise to do away at his and their, or any of their, free will and pleasure, to his and their profit and commodity, during the said term by the said letters patents mentioned; and that he the said Sir Robert Mansell, his executors, administrators, and assigns, and his and their deputies, servants, workmen, and agents, having license from the said Sir Robert Mansell, his executors, administrators, or assigns, should and might, from time to time during the term by the said letters patents granted, have and enjoy the sole trade of making and melting of all manner of drinking-glasses, broad glasses, window-glasses, looking-glasses, and all other kinds of glass, glasses, bugles, bottles, vials, or vessels in form aforesaid; and that no other during the term by the said letters patents granted should or might use or practice the art or feat of making or melting of any glass with timber or wood, nor with pit-coal or sea-coal or other fuel, not being timber or wood, nor made of timber or wood; to have, hold, use, exercise, practice, and put in use the said license, liberty, privilege, authority, and immunity of and for melting and making of all manner of drinking-glasses, broad glasses, window-glasses, looking-glasses, and all other kinds of glass and glasses, bugles, bottles, vials, and vessels whatsoever with sea-coal, pit-coal, and other fuel, not being timber or wood, nor made of timber or wood, in all parts and places within the said kingdom and dominions, unto the said Sir Robert Mansell, his executors, administrators, deputies, and assigns, and their and every of their servants, agents, workmen, and factors, for and during the whole term, and to the

full end and termination of fifteen years next ensuing the date of the said recited letters patents, fully to be complete and ended, freely and absolutely, without any rent, account, sum or sums of money, reckoning, allowance, or any other thing or things whatsoever to his Majesty's said late father, his heirs, or successors, to be therefore paid, made, given, answered, or done in any manner of wise, as by the said before recited letters patents, amongst divers other grants, powers, privileges, and other things therein contained, more at large appeareth. Now this indenture witnesseth that the king's Majesty that now is, taking also into his consideration the daily waste of timber or wood, notwithstanding the great providence of his said late father for the prevention thereof, and well weighing the dangerous consequence that may in general befall this kingdom, and in particular to every member thereof, if all due means for the prevention of the waste and decays of wood and timber, and for the preservation and increase thereof be not carefully supported, held, and maintained; and withal, his Majesty, duly considering the benefit and comfort that ariseth to his people by the cherishing of manufactures of all sorts amongst them, whereby great numbers of them are set on work and maintained, and much treasure thereby saved, kept within this kingdom which was unthriftily otherwise spent in the maintenance of manufactures abroad, whereby strangers in foreign parts have received employment, and his own people and subjects at home wanted means to set them on work, and for that the perfect and absolute art, mistery, and manufacture of making of glass and glasses of all sorts with pit-coal and sea-coal, and of late of looking-glass and spectacle-glass plates is established and settled within this his Majesty's kingdom by the great care, exceeding charge, and expenses of the said Sir Robert Mansell, whereby woods and timber heretofore greatly consumed in glass-works will be wholly preserved from being spent or wasted thereby, and many of his Majesty's subjects employed and set on work, especially in the making of spectacles and in the grinding, polishing, foiling, and casing of looking-glasses, which without the bringing in of the manufacture of the making of those plates could not have been established and settled in these his Majesty's dominions. And withal duly considering that by the establishment of that manufacture sufficient quantities of good glass of all kinds and sorts

have been made and wrought within this kingdom for the use and service of all his Majesty's dominions, and that at far more easy rates and prices than the same were formerly sold, and that by the industry and charge of the said Sir Robert Mansell; in due consideration of all which, and of the many and faithful services of him the said Sir Robert Mansell to his Majesty and his said late father, and of the yearly rent hereafter in these presents reserved and to be yearly paid to his Majesty, his heirs, and successors, during the term of years hereafter in these presents expressed, and for divers other good causes and considerations, his Majesty thereunto moving of his especial grace, certain knowledge, and mere motion hath given and granted, and by these presents, for him, his heirs, and successors, doth give and grant unto the said Sir Robert Mansell, his executors, administrators, and assigns, full and free liberty, license, power, privilege, and authority that he the said Sir Robert Mansell, his executors, administrators, and assigns, and his and their deputies, servants, workmen, factors, and agents only, and none others, shall and may from time to time and at all times hereafter during the term of years hereafter in these presents expressed at his and their and every of their wills and pleasures, use, exercise, practice, set up, and put in use the said art, feat, and mistery of melting and making of all manner of drinking-glasses, broad glasses, window-glasses, looking-glasses, spectacle-glasses, bugles, beads, otherwise known by the name of couterias or byniadoes bottles, vials, and vessels whatsoever made of glass, and all and every other thing and things whatsoever now made, used, or devised, or hereafter to be made, used, or devised of glass, or the matter or materials of glass, with sea-coal, pit-coal, or any other kind or sort of fuel whatsoever, not being timber or wood, nor made of timber or wood, within his Majesty's kingdom of England and the dominion of Wales and the town of Berwick, and within every or any part of them or any of them as aforesaid, and to make, erect, and set up as many furnaces, engines, structures, and devices, for that intent and purpose, and in as many places of the said kingdom of England, dominion of Wales, and town of Berwick as he or they shall think fit (first agreeing with the owners of the soil for the same). And the same drinking-glasses, broad glasses, window-glasses, looking-glasses, spectacle-glasses, bugles, beads, couterias or byniadoes

bottles, vials, and vessels whatsoever, made of glass, and all and every other thing and things whatsoever now made, used, or devised, or hereafter to be made, used, or devised, of glass or of the matter or materials of glass whatsoever so made, to utter or sell in gross or by retail, or otherwise to do away at his and their and any of their free wills and pleasures, to his and their profit and commodities during the term of years hereafter mentioned, and that he, the said Sir Robert Mansell, his executors, administrators, and assigns, by him and themselves, and his and their deputies, servants, workmen, and agents, having license from the said Sir Robert Mansell, his executors, administrators, and assigns, shall and may from time to time during the term of years hereafter in these presents expressed and granted, have and enjoy the said sole trades and privilege of making and melting all manner of drinking-glasses, broad glasses, window-glasses, looking-glasses, spectacle-glasses, bugles, beads, couterias or byniadoes bottles, vials, and vessels whatsoever made of glass, and of all and every thing and things whatsoever now made, used, or devised, or hereafter to be made, used, or devised, of glass or of the matter or materials of glass as aforesaid, and that no other person or persons whatsoever, during the term of years in and by these presents hereafter granted, shall or may use, exercise, practice, or put in use the art or feat of making or melting of any glass, glasses, bugles, beads, looking-glasses, spectacle-glasses, bottles, or vessels whatsoever made of glass or of the matter or materials of glass as aforesaid. And this indenture further witnesseth that for the causes, reasons, and considerations in these presents before expressed, his said Majesty, our sovereign lord the king that now is, of his further especial grace, certain knowledge, and mere motion, hath given and granted, and by these presents, for him, his heirs, and successors, doth give and grant unto the said Sir Robert Mansell, his executors, administrators, and assigns, full and free liberty, license, power, privilege, and authority, that he the said Sir Robert Mansell, his executors, administrators, and assigns, and his and their deputies, servants, workmen, factors, and agents only, and none others, shall and may from time to time and at all times hereafter during the term of years hereafter in these presents expressed, at his and their and every of their wills and pleasures, use, exercise, practice, set up, and put in use the art, feat,

and mistery of melting and making, with any kind of fuel whatsoever in the realm of Ireland and the dominions thereof, of all manner of drinking-glasses, broad glasses, window-glasses, looking-glasses, spectacle-glasses, bugles, beads, otherwise known by the name of couterias or byniadoes bottles, vials, and vessels whatsoever made of glass, and of all and every other thing and things whatsoever now made, used, or devised or hereafter to be made, used, or devised, of glass or of the matter or materials of glass, and to make, erect, and set up as many furnaces, engines, structures, and devices for that intent and purpose, and in as many places of the said realm of Ireland and dominions thereof as he or they shall think fit and convenient (agreeing with the owners of the soil for the same), and the same drinking-glasses, broad glasses, window-glasses, looking-glasses, spectacle-glasses, bugles, beads, couterias or byniadoes bottles, vials, and vessels whatsoever, made of glass, and all and every other thing and things whatsoever now made, used, or devised, or hereafter to be made, used, or devised of glass or of the matter or materials of glass whatsoever so made, to utter or sell in gross or by retail, or otherwise to do away at his and their or any of their free wills and pleasures to his and their advantage and commodity during the term of years hereafter mentioned, and that he, the said Sir Robert Mansell, his executors, administrators, and assigns, by him and themselves, and by his and their deputies, servants, workmen, and agents having license from the said Sir Robert Mansell, his executors, administrators, and assigns, shall and may from time to time during the term of years hereafter expressed, have and enjoy the sole trade and privilege of melting and making of all manner of drinking-glasses, broad glasses, window-glasses, looking-glasses, spectacle-glasses, bugles, beads, couterias or byniadoes bottles, vials, and vessels whatsoever made of glass, and of all and every other thing and things whatsoever now made, used, or devised, or hereafter to be made, used, or devised, of glass, or of the matter or materials of glass, within the said realm of Ireland and the dominions thereof as aforesaid; and that no other person or persons whatsoever, during the term of years hereafter mentioned, shall or may use, exercise, practice, or put in use the art or feat of melting or making of any glass, glasses, bugles, beads, looking-glasses, spectacle-glasses, bottles, vessels, or other the premises in the said

realm of Ireland or the dominions thereof as aforesaid; to have, hold, use, exercise, practice, and put in use the said several licenses, liberties, privileges, authorities, and immunities of and for the sole melting and making of all and all manner of drinking-glasses, broad glasses, window-glasses, looking-glasses, spectacle-glasses, bugles, beads, couterias or byniadoes bottles, vials, and vessels whatsoever made of glass; and of all and every other thing and things whatsoever now made, used, or devised, or hereafter to be made, used, or devised of glass or of the matter or materials of glass, with such several sorts and kinds of fuel and in such manner as in and by these presents is before limited and appointed in all parts and places within his Majesty's said realms of England and Ireland, dominion of Wales, and town of Berwick, and in every of them, and the uttering and selling of the same in gross or by retail or otherwise as aforesaid, and all and singular other the premises unto the said Sir Robert Mansell, his executors, administrators, and assigns, by him and themselves, or by his, their, and every of their deputies, servants, workmen, factors, and agents, for and during the whole term and to the full end and determination of one and twenty years, to commence, begin, and to be accounted from the end and expiration of the said term of fifteen years by the said before recited letters patents of his said Majesty's said late father unto the said Sir Robert Mansell, so granted as aforesaid, from thenceforth next and immediately ensuing, fully to be complete and ended, yielding and paying therefor yearly. And the said Sir Robert Mansell, for himself, his executors, administrators, and assigns, doth covenant, promise, and grant, to and with his Majesty, his heirs, and successors, by these presents to yield and pay unto his said Majesty, his heirs, and successors, during the said term of one and twenty years hereby granted, into the receipt of the Exchequer of his Majesty, his heirs, and successors at Westminster, the annual and yearly rent, farm, or sum of one thousand and five hundred pounds of lawful money of England, at the feasts of St. Michael the Archangel, and the Annunciation of the blessed Virgin Mary, or within the space of forty days next after either of the said feasts, by even and equal portions yearly to be paid; the first payment thereof to be begun at the feast of St. Michael the Archangel, next coming after commencement or beginning of this his Majesty's present

grant as aforesaid. And to the end the said Sir Robert Mansell, his executors, administrators, and assigns, may receive, perceive, and have such benefit, profit, and commodity as is intended unto him and them by this his Majesty's grant, and as the inventing and perfecting of so great a work undergone with such care, expense, and hazard deserveth, his said Majesty doth hereby expressly declare and signify his royal pleasure to be, and his said Majesty, for him, his heirs, and successors, doth straightly charge, inhibit, and command all and every other his Majesty's loving subjects, and all and every other person or persons, of what estate, degree, or condition they or any of them be, that they presume not nor attempt by any art, act, or device whatsoever, directly or indirectly in his Majesty's said realms of England and Ireland, dominion of Wales, and town of Berwick, or in any the parts or places to them, either, or any of them respectively belonging, to melt or make any manner or kind of drinking-glasses, broad glass, window-glasses, looking-glasses, spectacle-glasses, bugles, beads, couterias or byniadoes bottles, vials, or vessels whatsoever made of glass, and of all and every other thing and things whatsoever now made, used, or devised, or hereafter to be made, used, or devised, of glass or of the matter or materials of glass, with coal or any other sort of fuel whatsoever as aforesaid, during the term of years hereby granted, without the special consent and license in writing of the said Sir Robert Mansell, his executors, administrators, or assigns, but that the full and whole benefit, advantage, and profit of melting and making of all kind and kinds of glass and glasses whatsoever in his Majesty's said several realms of England and Ireland as aforesaid shall be and remain during all the said term of years hereby granted under the rent aforesaid to the sole and only behoof, disposition, and use of the said Sir Robert Mansell, his executors, administrators, and assigns, and to the use of none other person or persons whatsoever, and his said Majesty doth further by these presents, for him, his heirs, and successors, straightly charge, command, and prohibit, and doth signify his royal will and pleasure to be, that no person or persons whatsoever, of what estate, degree, or condition soever they be or any of them be, other than the said Sir Robert Mansell, his executors, administrators, deputies, and assigns, and such as shall be licensed, authorized, and set on work by him or them or some of them, do, shall, or may at any time

hereafter during the term of years hereinbefore granted, practice, erect, or set up by any ways or means the said art and feat of melting or making any kind of glass or glasses, bugles, beads, bottles, vials, or vessels whatsoever made of glass as aforesaid, or any furnace or furnaces for making thereof, within his Majesty's said realms of England and Ireland, dominion of Wales, town of Berwick, or in any parts or places to them or either of them belonging as aforesaid, upon pain of his Majesty's heavy displeasure and due and condign punishment for the contempt of his royal commandment in that behalf. And his said Majesty doth by these presents, for him, his heirs, and successors, give and grant unto the said Sir Robert Mansell, his executors, administrators, and assigns, deputies, factors, and agents, and every of them, full power, liberty, and authority, from time to time and at all times during the said term hereby granted, by all lawful ways and means to search, try, and find out all offences and acts committed and done contrary to the true intent and meaning of these his Majesty's letters patents, and likewise his Majesty, for him, his heirs, and successors, doth hereby, of his especial grace, certain knowledge, and mere motion, give and grant unto the said Sir Robert Mansell, his executors, administrators, deputies, assigns, factors, agents, and servants, free power, liberty, license, and authority to utter and sell in gross or by retail such kind of glass or glasses before mentioned as shall be made by virtue of these his Majesty's letters patents, and if he or they shall have more than will furnish and serve his Majesty and the subjects of his Majesty, his heirs, and successors, of the said several realms of England and Ireland as aforesaid, that then he and they and such others as shall buy, acquire, or obtain the said glasses so made as aforesaid of him, or them, or any of them, may at their pleasure transport and carry over into foreign parts beyond the seas, so many and so much thereof as he or they shall think fit; paying unto his Majesty, his heirs, and successors, the customs and other duties due to be paid for the same, and leaving a sufficient quantity for the use and service of his Majesty, his heirs, and successors, and of his and their subjects of the said several realms and the dominions thereof at moderate rates and prices during the said term; and further for the considerations aforesaid his Majesty, of his especial grace, certain knowledge, and mere motion, doth hereby, for him,

his heirs, and successors, further grant unto the said Sir Robert Mansell, his executors, administrators, deputies, and assigns, full power, license, and authority that he and they shall or may lawfully, from time to time during the said term before granted, import and bring, or cause to be imported and brought, into his Majesty's said realms of England and Ireland and the dominions thereof, all or any sorts or kinds of Venice and Morana glasses whatsoever, and the same so imported as aforesaid to utter or sell in gross or by retail or otherwise, to do away at his and their wills and pleasures, and for his and their benefit and advantage, without paying or yielding to his said Majesty, his heirs, or successors, any account, rent, or recompense of or for the same, other than the customs and other duties due for the same, and other than the yearly rent before herein reserved, and yearly to be paid to his said Majesty, his heirs, and successors as aforesaid, and the said Sir Robert Mansell, for him, his executors, administrators, and assigns, doth covenant, promise, and grant to and with our said sovereign lord the king, his heirs, and successors, by these presents, that he the said Sir Robert Mansell, his executors, administrators, and assigns, shall and will during the said term of years hereinbefore granted as aforesaid, well and sufficiently supply and furnish his Majesty's said several realms and kingdoms of England and Ireland and the subjects thereof, from time to time with all sorts and kinds of good glass and glasses whatsoever at moderate rates or prices to be required, paid, and taken for the same, and his said Majesty, for him, his heirs, and successors, doth further grant to the said Sir Robert Mansell, his executors, administrators, and assigns, and doth hereby also straightly charge, require, and prohibit all and all manner of person and persons whatsoever other than the said Sir Robert Mansell, his executors, administrators, and assigns, that they or any of them during the said term of one and twenty years hereby granted, do not attempt or presume to import or bring, or cause to be imported or brought, into these his Majesty's realms of England and Ireland, dominion of Wales, or town of Berwick, or any of them, from Venice or Morana, or from any other foreign part or parts whatsoever (Scotland only excepted), any manner or kind of glass or glasses whatsoever as aforesaid, nor shall directly or indirectly buy or contract for, sell, utter, or put to sale, any such

kinds or sorts of glass so made or imported, or to be made or imported, contrary to the tenor and true meaning of these his Majesty's letters patents, and the several grants, licenses, and privileges to the said Sir Robert Mansell, his executors, administrators, and assigns therein granted, upon pain of his Majesty's high displeasure and of such punishments and penalties as by the laws and statutes of this realm or otherwise shall or may be inflicted on such delinquents according to the merits of such their contempts and offences in that behalf. And his said Majesty also, for him, his heirs, and successors, doth grant and covenant by these presents to and with the said Sir Robert Mansell, his executors, administrators, and assigns, that he, his heirs, or successors, will not, at any time during the said term of one and twenty years, give or grant to any person or persons whatsoever, other than to the said Sir Robert Mansell, his executors, administrators, and assigns, any license or toleration to import or bring into his said realms of England and Ireland, or any of them, any sorts or kinds of glass or glasses whatsoever, from any foreign part or parts whatsoever (Scotland only excepted), and his Majesty doth further give and grant unto the said Sir Robert Mansell, his executors, administrators, and assigns, and to his and their deputies, factors, and agents, and every of them, full power, liberty, and lawful authority, from time to time and at all times during the said time and term of one and twenty years, by all lawful ways and means to search, try, and find out all offences and acts from time to time committed, perpetrated, or done, or to be committed, perpetrated, or done, contrary to the true intent and meaning of these presents, and his Majesty doth further, for him, his heirs, and successors, will and grant that the several treasurers, vice-treasurers, chancellors, barons, and other the officers and ministers of his Highness's exchequers of his several realms of England and Ireland, for the time being respectively, by force of these presents, or the enrollment, constat, or exemplification thereof, from time to time, and at all times hereafter during the said term of years hereby granted, upon the request of the said Sir Robert Mansell, his executors, administrators, or assigns, or his and their deputies, servants, factors, or agents, shall grant forth, make, and direct under the several and respective seals of the said several courts of exchequers or other courts of his said several realms or kingdoms of England

and Ireland as aforesaid respectively, such and so many writ and writs, close or patent, and other processes whatsoever, unto such mayors, bailiffs, sheriffs, customers, comptrollers, searchers, and other officers of his Majesty, his heirs, and successors, in such shires, counties, cities, towns, boroughs, and other places whatsoever within the said several realms of England and Ireland respectively, and the dominions thereof, as the said Sir Robert Mansell, his executors, administrators, or assigns, or his or their deputies, servants, agents, or factors shall at any time and from time to time require, during the said term of years hereby granted or meant or intended to be granted as aforesaid, thereby charging and commanding the said officers and every of them in their several offices and places respectively, diligently, faithfully, and carefully to inquire, try, search, and find out all and every such person and persons as contrary to the true intent and meaning of these his Majesty's letters patents shall at any time during the said term of years hereby granted, make, set, utter, import, or bring in as aforesaid any such kind of glass or glasses whatsoever hereinbefore mentioned, or build, make, use, erect, or set up, or cause to be builded, made, erected, or set up, any such furnaces, structures, engines, or devices for the melting or making of any the sorts or kinds of glass or glasses before mentioned, and them to apprehend and put in safe custody until they understand the pleasures of his Majesty's said treasurers, vice-treasurers, chancellors, and barons of his said courts of exchequers of his said several kingdoms or realms of England and Ireland respectively, to whom it shall or may appertain in that behalf, and further order by them be taken therein, and his Majesty doth hereby, for himself, his heirs, and successors, will and command the treasurers, vice-treasurers, chancellors, and barons of the said exchequers, and all other the officers and ministers of his said several realms or kingdoms of England and Ireland respectively for the time being, and every of them, that they, every, or any of them, upon complaint made by the said Sir Robert Mansell, his executors, administrators, or assigns, or his or their deputies, servants, factors, or agents in that behalf, do perform and execute all that in justice they may, as well for the demolishing and destroying of the said furnaces, structures, engines, and devices set up or devised contrary to the true intent of these presents as for the lawful punishment of

all such as shall any ways offend against any grant, license, power, privilege, inhibition, matter, or thing whatsoever in these his Majesty's letters patents mentioned or contained, and for the confiscation and forfeiture of all sorts and kinds of glass and glasses whatsoever that shall be made, shipped, imported, or brought in, or otherwise vented, uttered, or sold contrary to the true intent and meaning of these presents as by his Majesty's said courts of exchequers and other his said officers respectively shall be thought meet. And for the better execution of this his Majesty's grant and the several licenses, powers, privileges, matters, and things therein contained, his said Majesty doth hereby, for him, his heirs, and successors, give and grant full power, license, and authority unto the said Sir Robert Mansell, his executors, administrators, and assigns, by him and themselves or by his or their deputies, agents, factors, or servants, with the assistance of some officers appointed for the preservation of the peace or other lawful officer of his said several realms and kingdoms respectively, to enter into any ship, bottom, vessel, boat, houses, cellars, sollers, warehouses, shops, rooms, glass-house or glass-houses, and other place or places whatsoever within any part of his Majesty's said several kingdoms and dominions respectively as aforesaid, as well within liberties as without, where any such furnaces, structures, engines, or devices shall be erected, made, or set up contrary to the true meaning of these presents, or where any sorts of glass made or imported contrary to the licenses and privileges hereby granted or intended to be granted as aforesaid, shall probably or reasonably be suspected to be, and there by all lawful ways and convenient means to try and search for all and all manner and kind of any the glass and glasses before in these his Majesty's letters patents mentioned, and glass-works erected or made in any part of his said several kingdoms to be made, bought, sold, imported, or brought in contrary to the true intent and meaning of these presents, or to any law, proclamation, ordinance, restraint, or inhibition in that behalf made or ordained, or to be made or ordained; and if upon inquiry or search they shall find any such glass or glasses made, imported, shipped, or brought in, or any glass-work or works, furnace or furnaces, built or erected contrary to the true intent and meaning of these presents, that then and in every such case it shall and may be lawful to and for the said

Sir Robert Mansell, his executors, administrators, and assigns, and his and their deputies, servants, and agents, with an officer sworn for the preservation of his Majesty's peace, or other lawful officer, to take and seize the same and with all convenient speed to signify the same seizure and seizures to his Majesty, his heirs, or successors, or to the treasurers, vice-treasurers, chancellors, or barons of his said several exchequers, or other the officers of his said several offices of his said several realms and kingdoms of England and Ireland, or either of them, to whom in that behalf it shall or may appertain, for such further order and redress to be taken therein as shall appertain and to them shall seem fit, that the true intent and meaning of these his Majesty's letters patents be duly and fully obeyed, observed, and kept accordingly; and if in the execution thereof, or of any license, privilege, power, or inhibition therein contained, the said Sir Robert Mansell, his executors, administrators, and assigns, or his or their deputies, agents, or factors, or any of them, shall find any opposition or resistance, that then he or they do certify the same unto his Majesty's said Court of Exchequer, and other the said officers and ministers of his said several realms and kingdoms respectively, to the end the offenders therein may receive condign and deserved punishment for their several offences, and his Majesty doth further hereby straightly charge and command all mayors, sheriffs, justices of peace, bailiffs, customers, searchers, constables, officers, and ministers, and all other the subjects of his Majesty, his heirs, and successors, of his said several kingdoms and realms of England and Ireland respectively, to be aiding and assisting from time to time during the term of years hereinbefore mentioned to the said Sir Robert Mansell, his executors, administrators, and assigns, and to his and their deputies, factors, servants, and agents in the full and due accomplishment, upholding, and maintaining of these his Majesty's letters patents, grants, and privileges, and of all matters and things therein contained, and in complaining, suing, impleading, and prosecuting against such as shall withstand or impugn the same, whereby they may be censured and punished according to justice. And these presents or the enrollment thereof shall be his and their sufficient warrant and discharge in that behalf. And lastly his Majesty by these presents, for him, his heirs, and successors, of his further especial grace, certain knowledge, and mere

motion, doth grant unto the said Sir Robert Mansell, his executors, administrators, and assigns, that these presents or the enrollment thereof shall be taken, construed, and adjudged in all and every his Highness's courts of justice and elsewhere to be most favorable, effectual, and available to and for the said Sir Robert Mansell, his executors, administrators, and assigns, and most strongly against his Majesty, his heirs, and successors, notwithstanding the not describing the certainty of the form of the furnaces, structures, engines, and devices to be used for the melting and making of all manner of drinking-glasses, broad glasses, window-glasses, looking-glasses, or any other kind of glass, glasses, bugles, bottles, vials, or vessels whatsoever, and notwithstanding the not particular naming or misnaming of the kind, form, or manner of glasses to be made or imported by virtue of this his Majesty's grant, or the sizes or scantlings of the same, and notwithstanding the misreciting and not true and perfect reciting of the said grant or grants of license and privilege heretofore made to the said Sir Robert Mansell by his Majesty's said late dear father touching the melting and making of the said glass and glasses, and the several sorts and kinds thereof therein mentioned or expressed, and notwithstanding any other misrecital or non-recital or any other defects or incertainties in these presents, or any statute, law, provision, proclamation, act, ordinance, or restraint before had, made, or provided, or any other thing, matter, or clause to the contrary notwithstanding. Provided always, that if it shall happen the said yearly rent or sum of one thousand five hundred pounds hereby reserved and yearly payable to his said Majesty, his heirs, and successors as aforesaid, or any part or parcel thereof, shall be behind and unpaid by the space of fifty days next after either of the said feasts in which the same ought to be paid as aforesaid, that then his Majesty's grants or letters patents, and every clause, article, power, and privilege therein contained, shall cease, determine, and be utterly void, to all intents, constructions, and purposes whatsoever, anything in these presents contained to the contrary notwithstanding. Provided also that if the said Sir Robert Mansell, his executors, administrators, or assigns, shall not enroll these his Majesty's letters patents before the clerk of the Pipe for the time being in the Exchequer of England within six months after the date thereof, then the said Sir Robert Mansell, his execu-

tors, administrators, or assigns, shall forfeit and pay to his Majesty, his heirs, and successors (nomine poenae), the sum of fifty pounds of lawful money of England, and so for every six months after, in which the same shall not be enrolled as aforesaid, to forfeit and pay to his Majesty, his heirs, and successors, the like sum of fifty pounds (nomine poenae) until the said letters patents shall be enrolled according to the intent and meaning of these presents. In witness whereof to the one part of these presents, remaining with the said Sir Robert Mansell, his said Majesty hath caused the great seal of England to be put, and to the other part thereof, remaining with his Majesty, the said Sir Robert Mansell hath put to his hand and seal the day and year above written, anno Domini, 1634.

Et memorandum quod secundo die Marcii anno regni regis Caroli decimo praefatus Robertus Mansellus, miles, venit coram dicto domino rege in Cancellaria sua, et recognovit indenturam praedictam ac omnia et singula in eadem contenta et specificata in forma suprascripta, &c.

BIBLIOGRAPHY

BIBLIOGRAPHY

MANUSCRIPT SOURCES

In the British Museum.

Landsdowne MSS. These are particularly important because they are largely made up of Burghley and Cæsar papers. Burghley collected the most important correspondence relating to industries in Elizabeth's reign, and Cæsar did the same in the reign of James I.

Titus MSS. Cotton Collection.

Vespasian MSS. Cotton Collection.

Harleian MSS.

Egerton MSS.

Sloane MSS.

Additional MSS.

For all the British Museum manuscripts there are published catalogues which indicate the subject-matter of each document. The "Class Catalogue" in the Manuscript Reading-Room of the Museum is a convenient and useful, though incomplete guide.

In the Privy Council Office.

Council Registers. One of the best sources of information. The Registers have been published only as far as the year 1598, and further publication has unfortunately been suspended. The published Registers, under the title of *Acts of the Privy Council*, practically cover Elizabeth's reign.

In the Library of Lincoln's Inn.

Coxe MSS.

In the London Guildhall Records Room.

Repertories of the Board of Aldermen.

Remembrancia. Correspondence between the national and city authorities. The *Analytical Index* published in 1878 gives the letters in condensed form.

At the Public Record Office.

State Papers, Domestic. The series covering the period from 1560 to 1640 are: Elizabeth, James I, Addenda, and Charles I. There are published calen-

dars for all these series, but only brief ones for the reign of James I and the early part of the reign of Elizabeth.

Patent Rolls. The full text of all important grants. The manuscript calendars are a necessary guide. The Patent Office Specifications publish the full text of nearly all the early patents for invention from the year 1617.

Signet Office Docquet Books. The most convenient source of information as to patent grants. The important particulars of the grants are here given. In these books were copied the memoranda at the foot of the "King's Bill." The index volumes are valueless.

Grant Books.

Sign Manual.

Warrant Books.

State Paper Docquets. Very brief memoranda of grants.

Exchequer Decrees and Orders.

Depositions taken by Special Commission, King's Remembrancer of the Exchequer.

Audit Office Declared Accounts.

The Historical Manuscripts Commission has published a calendar of the *Salisbury Papers* preserved at Hatfield House. It has also published a calendar of the manuscripts preserved in the Library of the House of Lords.

CONTEMPORARY PRINTED LITERATURE

Collections of Proclamations in the British Museum, the Library of the Society of Antiquaries, and the Record Office.

Collections of Broadsides in the Library of the Society of Antiquaries.

1549. Hales, John. *Discourse of the Commonwealth.*

1559. Agricola, George. *De re Metallica.*

1596. Harington, Sir John. *Metamorphosis of Ajax.*

1607. Norden, J. *Surveyor's Dialogue.*

1610. James I. *Book of Bounty.*

1612. Sturtevant, S. *Metallica.*

1613. Rolvenson, J. *Metallica.*

1615. Stow, J. *Annals of England,* Edm. Howes, editor.

1620–21. Petitions and Parliamentary Matters, London Guildhall Tracts, Beta.

1622. Misselden, E. *Free Trade, or the Means to make Trade flourish.*

1622. Malynes, Gerard. *Lex Mercatoria,* or *Ancient Law Merchant.*

1638–75. Petitions and Remonstrances. In George III Library, British Museum.

1640–60. King's Pamphlets, in the British Museum.

1641. Naunton, Sir Robert. *Fragmenta Regalia.*

1641. Robinson, Henry. *England's Safety in Trade's Increase.*

1641. Davies, J. (Citizen and Fishmonger.) *Answer to Printed Papers by the late Patentees of Salt in their pretended Defence against Free Trade.*

1641. . . . Hyde, E. (Earl of Clarendon). *History of the Rebellion and Civil Wars in England.* 1st ed. 1702. . . .

1641. Anon. *A True Remonstrance of the State of the Salt Business.*

1641. Anon. *Short and True Relation concerning the Soap Business.*

1642. . . . Bushell, *Tracts.* This volume in the British Museum is a series of printed memorials addressed to the crown and Parliament. It contains *The Just and True Remonstrance of his Majesty's Mines Royal in the Principality of Wales*, 1642; *The Case of Thomas Bushell truly stated*, 1649; *Mr. Bushell's Abridgment of Lord Chancellor Bacon's Philosophical Theory of Mineral Prosecutions*, 1659; and some supplementary notes added at the Restoration.

1645. Howell, J. *Epistolae Ho-Elianae.*

1649. Gray, Wm. *Chorographia.*

1650. Lilburne, J., *et al.* *The Soapmakers' Complaint for the Loss of their Trade.*

1651. Welldon, Sir A. *The Court of King Charles.*

1651. Anon. *Abstract or Brief Declaration of his Majesty's Revenue.* 1619–20. (Somers, *Tracts*, 2d ed. 1809, ii, pp. 364–400.)

1656. S—, W— (Gent.). *Golden Fleece.*

1662. Merret, C., ed. *A. Neri's Art of Glass.*

1663. Worcester, Marquis of. *A Century of Inventions.*

1665. Dudley, Dud. *Metallum Martis.*

1670. Pettus, Sir J. *Fodinae Regales.*

1677. Powle, *Account of the Iron-Works in the Forest of Dean.* (Phil. Trans.)

1679. (Carew, T.) *Brief Narrative of the several remarkable Cases of Sir William Courten and Sir Paul Pindar.*

1681. Carew, T. *Hinc illae Lachrymae, or the Life and Death of Sir William Courten and Sir Paul Pindar.*

1681. Yarranton, A. *England's Improvement by Land and Sea.*

1681. . . . Houghton, J., ed. Collection for the Improvement of Husbandry and Trade. (2d series, 1693. . . .).

1713. Stringer, M. *Opera Mineralia Explicata.*
Based upon personal knowledge, and records no longer extant.

PARLIAMENTARY PROCEEDINGS

Statutes of the Realm.

Husband, E. *Orders and Ordinances*, 1642–46. 1646.

D'Ewes, Sir Simonds, *Parliaments of Elizabeth*. 1682.

Townshend, H. *Historical Collection of the last four Parliaments of Elizabeth*. 1680.

Parliamentary History. 1806. . . .

Proceedings and Debates, 1620–21. 2 vols. 1766.

Rushworth, J. *Historical Collection of Private Passages of State, of weighty Matters in Law, remarkable Proceedings in five Parliaments, etc.*, 1618–49. 1659–1701.

Journals of the House of Commons.

Journals of the House of Lords.

LEGAL REPORTS

Coke, Sir Edward. *Reports*. 1st English edition, 1777, 13 parts, 7 volumes.

Moore, Sir Francis. *Cases Collect. & Report. — per Sir F. Moore. — Ore primierent imprime & publie per l'original remainant en les mains de Sir G. Palmer*. 1st ed. 1663, 2d ed. 1688. The *Exact Abridgment in English*, by W. Hughes, 1665, is of no value.

Noy, William. *Reports of Cases taken in the Time of Queen Elizabeth, King James, and King Charles*. 1656.

Hardres, Sir Thomas. *Reports of Cases adjudged in the Court of Exchequer in the Years* 1655–60. 1693.

SECONDARY AUTHORITIES

Brand, John. *History of Newcastle*. 1789.

Cunningham, W. *Growth of English Industry and Commerce in Modern Times*. 3d ed. 1903.

pp. 53–85 are devoted to "The Policy of Burleigh" (contributed to the work by Mrs. Lilian Tomn Knowles), and pp. 285–331 to "Regulation of Social and Industrial Conditions" under the Stuarts. At the end of the work there is a useful bibliography. The author sympathizes with the monopoly policy, with a few exceptions.

Dictionary of National Biography. 1885. . .

Various articles under the names of patentees give useful hints as to sources of information.

Durham, F. H. *Relation of the Crown to Trade under James I.* Royal Historical Society Transactions, 1899.

Galloway, R. L. *Annals of Coal Mining and the Coal Trade.* 2d ed. 1898.

Gardiner, S. R. *History of England,* 1603–42. 10 vols. 1893.

Ch. xxxiii in vol. iv deals with the monopoly agitation of 1621, based on an article in Archæologia.

Gardiner, S. R. *Four Letters of Lord Bacon to Christian IV.* Archæologia, February, 1867.

Contains a long and somewhat labored defence of Bacon's attitude toward the monopolies.

Hallen, C. *Early English Glassmakers.* Scottish Antiquary, April, 1893.

Hartshorne, A. *Old English Glasses.* 1897.

Hewins, W. A. S. *English Trade and Finance in the Seventeenth Century.* 1892.

Monopolies are considered in the introduction, and in chapters i and ii. Ch. ii deals chiefly with the iron industry. The author takes an unfavorable view of the patents.

Hulme, E. W. *History of the Patent System under the Prerogative and Common Law.* Law Quarterly Review, April, 1896, January, 1900.

A convenient descriptive account of patents for invention, 1560–1600.

Hulme, E. W. *English Glass-making in the Sixteenth and Seventeenth Centuries.* Antiquary, November, 1894, December, 1894, March, 1895, April, 1895.

Very good articles with many helpful citations.

Meikleham, R. S. *The Progress of Machinery and Manufactures in Great Britain exhibited in chronological notices of some Inventions and Improvements from the earliest Times to the Present,* pp. 1–234 in vol. v of Weale's Quarterly Papers on Engineering. 1846.

This, the longest account of the early patents hitherto published, is more noteworthy for its rarity than for its scholarly merits. It is professedly only a compilation of extracts from original sources, but the editorial work is poor.

Ordish, T. F. *Early English Inventions,* 1603–20. Antiquary, July, August, and September, 1885.

Not altogether satisfactory. The author frequently cites the "Pells Privy Seal Books," but he apparently has in mind the Signet Offices Docquet Books.

Page, Wm. *Letters of Denizations and Acts of Naturalization,* 1509–1603. Huguenot Society Publications (vol. viii), 1893.

pp. xlii–li deal with Foreign Influence on Trades.

Prothero, G. W. *Statutes and Constitutional Documents,* 1558–1625. 2d ed. 1898.

Strype's *Stow's Survey of London and Westminster.* 2 vols. 1720.

Strype's additions are the most useful part of the work. They consist of nearly

verbatim copies from manuscripts, chiefly the Lansdowne volumes, which were at one time in Strype's possession.

Unwin, George. *Industrial Organization of the Sixteenth and Seventeenth Centuries.* 1904. The best discussion of the industrial history of the period that has yet been published; unfavorable to monopolies.

Nearly every text-book on English Patent Law gives an introductory historical review of the monopolies before the statute of 1624, but these have little value as history. For the historical student the most helpful book on English Patent Law is by J. W. Gordon, *Monopolies by Patents*, 1897, chiefly useful for its appended matter. For a good classified list of books on all phases of the subject of patents for inventions, consult *Subject List of Books on Industrial Property in the Library of the Patent Office*, London, 1900.

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